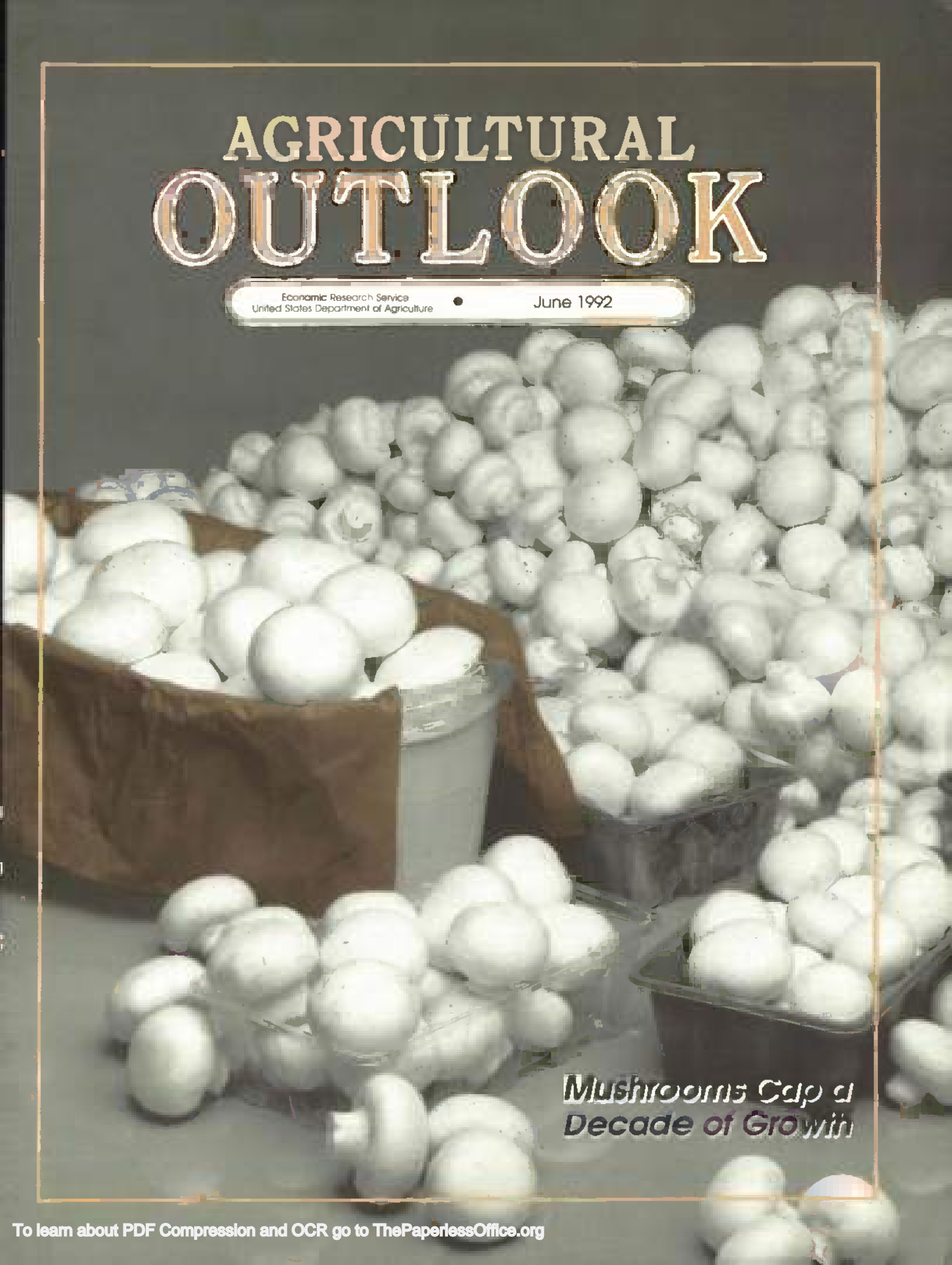


# AGRICULTURAL OUTLOOK

Economic Research Service  
United States Department of Agriculture

June 1992



*Mushrooms Cap a  
Decade of Growth*

# AGRICULTURAL OUTLOOK



**Cover Photo:** White button mushrooms (*agaricus*)  
Courtesy American Mushroom Institute

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## News of 1992 Crop Forecasts, the U.S. Mushroom Industry, Mexico and NAFTA, and Trade with the Former USSR

**T**he U.S. economy improved noticeably in the first quarter of 1992. Preliminary estimates indicate real gross domestic product (GDP) grew at an annual rate of more than 2 percent in the first quarter, led by the sharp increase in consumer spending since the first quarter of 1988. But gains in employment and industrial production were less impressive. The economy should continue improving through this year and next, but uncertainty about consumer confidence, long-term interest rates, and overseas economies clouds the outlook.

How do changing economic conditions affect entry into and exit from farming? Evidence suggests that entry is more sensitive than exit to economic conditions. A more prosperous general economy relative to the farm economy tends to slow potential farmers' entry into the sector. During the 1980's, while the general economy was expanding, the principal response to poor agricultural economic and financial conditions was fewer farmers entering the sector, with exit remaining more stable.

Although annual USDA estimates of farm numbers show continued declines between 1988 and 1991, the pace has slowed since the mid-1980's. If past trends of stable exit prevail, the slower decline in farm numbers suggests annual entry may have rebounded partially.

May marks the appearance of USDA's first official projections for 1992/93 crops. These projections indicate that U.S. wheat, feed grain, and rice production will likely be up in 1992, while cotton and soybean production will likely be down from 1991's relatively high levels. U.S. ending stocks for all field crops except soybeans and barley are expected level or up in 1992/93—in some cases substantially.

The U.S. orange production estimate for 1991/92 exceeds earlier forecasts because larger-than-expected fruit size is



boosting California's output. Noncitrus fruit trees and vines survived the winter and spring with minimal damage, setting the stage for a large noncitrus crop in 1992.

The U.S.-Mexico article concludes a five-part AO series exploring linkages between the U.S. and Mexico. U.S. agriculture would benefit from creation of a North American Free Trade Agreement (NAFTA) among the U.S., Canada, and Mexico—an arrangement that would combine 360 million people and \$6 trillion of economic output into a free trade area. Liberalized trade would expand U.S. agricultural exports to Mexico, with grains and oilseeds estimated to account for most of the expansion. Horticultural products would account for more than half of Mexico's additional agricultural exports to the U.S., and some of its livestock products would also see an increase.

Meanwhile, U.S. agricultural producers and exporters are making inroads in one

familiar market, the former USSR—but under much different trade arrangements than in the past. With the collapse of Soviet communism came the collapse of one of the largest cash markets for U.S. agricultural exports, changing U.S.-Soviet trade from sales for cash to sales made possible by Commodity Credit Corporation (CCC) programs. The U.S. now supports agricultural exports to the former Soviet Union principally through the Export Enhancement Program (EEP) and the Export Credit Guarantee Program (known as GSM-102).

The U.S. mushroom industry caps a decade of growth, but faces a number of challenges arising from increasing environmental sensitivity, some uniquely related to the nature of mushroom production. The U.S. is the world's largest commercial mushroom producer, with 21 percent of the world's 3.3 billion pounds in 1990. Cash receipts ranked fifth among all vegetables in 1990, with sales totaling \$671 million in 1990/91, nearly doubling over a decade.

One challenge facing U.S. mushroom growers arises from the use of compost as a growing medium—the storage and disposal of used compost can lead to problems, not just for growers but for their nonfarm neighbors. Another challenge relates to the “minor use” dilemma facing several crop producers, as they search for replacements for pesticides withdrawn by manufacturers unable or unwilling to reregister for minor use crops.

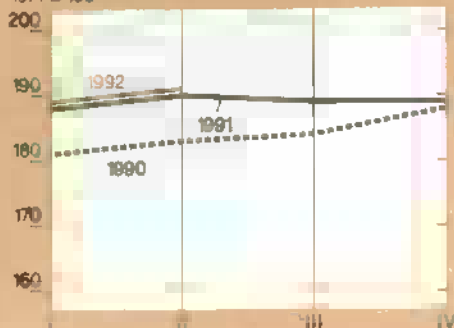
Environmental concerns are also cropping up in the European Community (EC), as it begins implementing the EC directive to reduce excessive nitrate levels that contribute to deteriorating water quality. Intensive agriculture—both crop and livestock—is at the root of the EC's farm-related water quality problems. Intensification has occurred in almost all densely populated areas of the Community.

## Commodity Overview

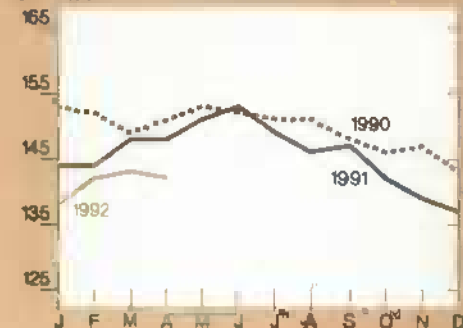
## Prime Indicators

Index of prices paid by farmers

1977 = 100

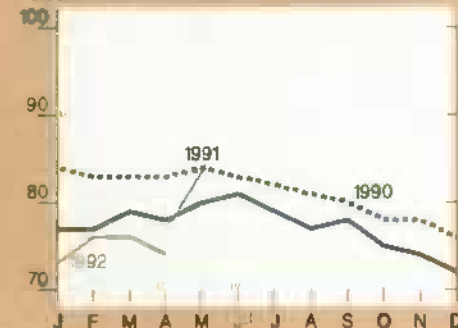
Index of prices received by farmers<sup>1</sup>

1977 = 100

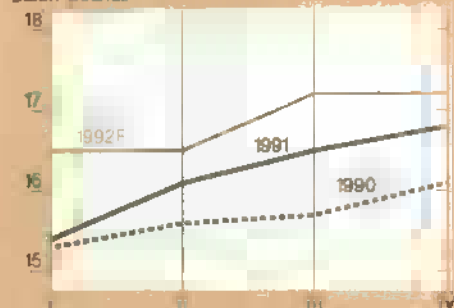


Ratio of prices received/prices paid

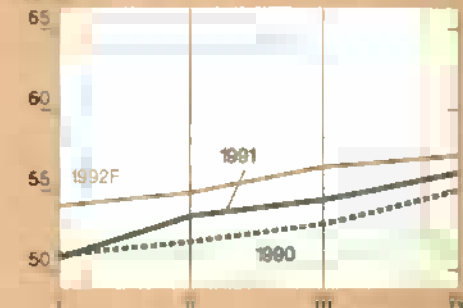
Percent

Total red meat & poultry production<sup>2</sup>

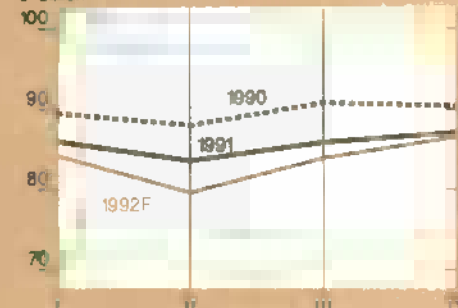
Billion pounds

Red meat & poultry consumption, per capita<sup>2,3</sup>

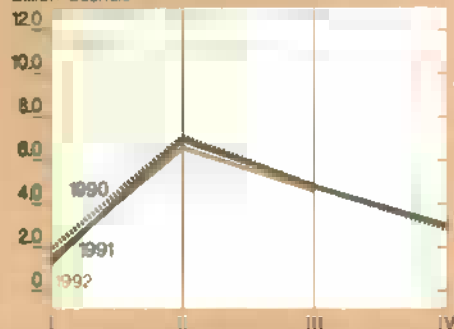
Pounds

Cash receipts from livestock & products<sup>4</sup>

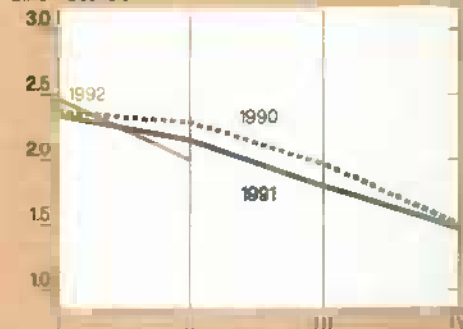
\$ billion

Corn beginning stocks<sup>6</sup>

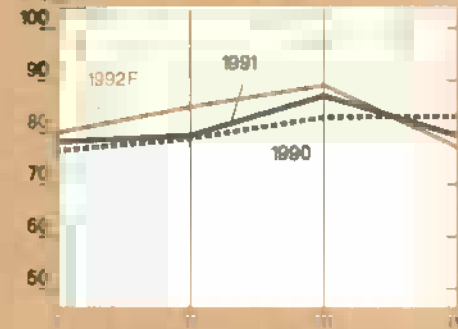
Billion bushels

Corn disappearance<sup>6</sup>

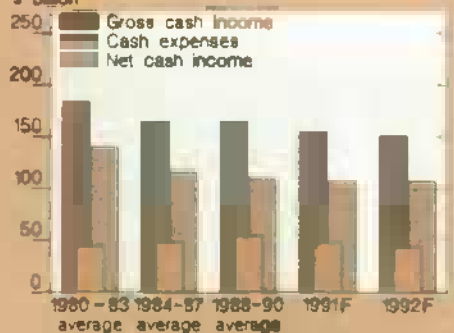
Billion bushels

Cash receipts from crops<sup>4</sup>

\$ billion

Real cash income (1987 \$)<sup>6</sup>

\$ billion



Average real value of farm real estate

1982 \$/acre



Farm value/retail food costs

Percent



<sup>1</sup>For all farm products. <sup>2</sup>Calendar quarters. Future quarters are forecasts for livestock, corn, and cash receipts. <sup>3</sup>I=Sept.-Nov.; II=Dec.-Feb.; III=Mar.-May; IV=June-Aug. Marketing years ending with year indicated. <sup>4</sup>Cash receipts per head of cattle, equal to total cash receipts for cattle.

<sup>5</sup>Retail weight. <sup>6</sup>Seasonally adjusted annual rate.





## Livestock, Dairy & Poultry Overview

Recent year-over-year changes reported in the size of the hatching-egg flock and the number of chicks hatched point to continuing increases in broiler production during the second quarter. This will keep downward pressure on broiler prices that may average marginally lower than a year ago. The egg industry's 3-year streak of favorable prices and returns appears to have ended—New York wholesale prices are averaging well below a year ago, with no signs of firming soon given the expected production increases.

The number of cattle on feed on April 1 in the 13 quarterly reporting states was 10 percent below a year earlier, the lowest inventory for this date since 1988. The inventory drop was due largely to a 5-percent decline from a year earlier in the number of cattle placed on feed during the first quarter.

From January through April 1992, USDA accepted bids under the Dairy Export Incentive Program (DEIP) for

nearly 19,000 metric tons of nonfat dry milk and over 10,000 tons of butteroil for calendar 1992. A total of \$30 million in bonuses was contracted to be paid to firms shipping U.S. dairy products to 15 countries. [For the latest livestock, dairy, and poultry market conditions, see tables 10-16.]

### A Third of Dairy Exports Due to DEIP

Although total U.S. exports of dairy products claimed little more than 1 percent of U.S. milk production in 1991, about a third of dairy exports were assisted by bonuses awarded under the Dairy Export Incentive Program (DEIP).

USDA Secretary Madigan announced measures on April 9, 1992 that will boost DEIP activity. Mexico and Jamaica were added to the list of countries qualified as DEIP destinations, which now number 87. Countries eligible to buy cheddar cheese may now also purchase mozzarella, gouda, feta, and cream cheese under the DEIP. And countries eligible for export credit guarantees as well as the DEIP can use the two programs in combination.

The DEIP provides export assistance for U.S. dairy products, similar to Export

Enhancement Program (EEP) support for other commodities. The DEIP was authorized by the 1985 farm act and extended through December 31, 1995 by the 1990 farm legislation.

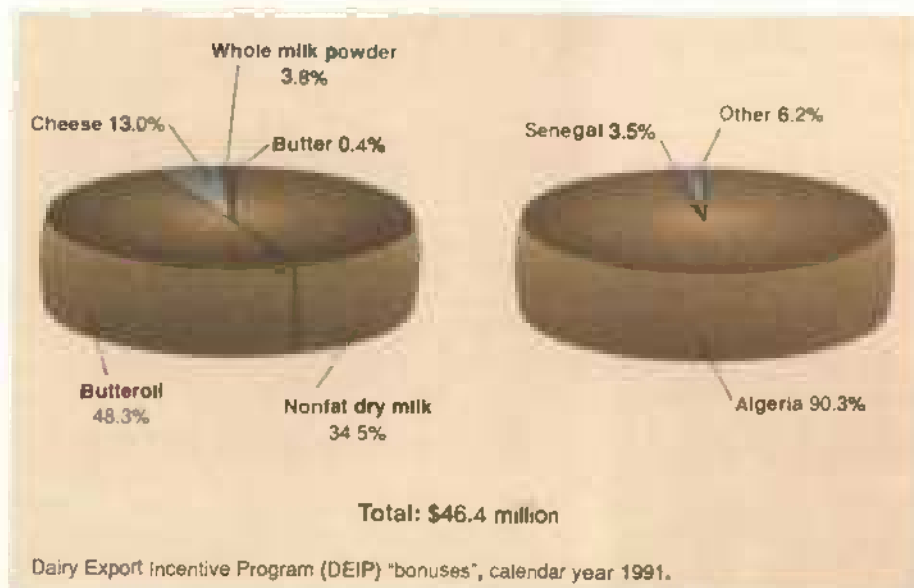
The DEIP helps U.S. dairy exporters compete with countries that subsidize dairy product exports, while not affecting sales by countries that export without subsidy. The U.S. targets markets that have been buying dairy products from subsidizing countries, particularly from the European Community (EC).

Government bonuses are awarded to exporters of specific dairy products, including butter and butteroil, nonfat dry milk, whole milk powder, and cheeses (cheddar, gouda, feta, mozzarella, and cream cheese). Until the switch to cash bonuses in early November 1991, bonuses were paid in commodity certificates. The shift to cash occurred in part because CCC stocks of most dairy products available for redemption were dwindling.

In 1991, export sales under DEIP reached over 600 million pounds milk equivalent, with over 90 percent of the product destined for Algeria. Export bonus awards totaled \$46.4 million from March through December, for 38 contracts to 14 countries. Nonfat dry milk claimed the bulk of the volume exported,

Most DEIP Bonuses Were for Exports of Butteroil and Nonfat Dry Milk ...

... and Most of the Export Assistance Went to Algeria



## Commodity Overview

### It Helps To Know... Common Livestock Terms

Animal terms used in the livestock and poultry sectors generally refer to the age or sex of animals, and whether they are intended for breeding, destined for a feedlot, or kept on forage for feed. Egg production terminology mainly distinguishes between production for food and for flock expansion.

#### **Cattle:**

**Heifers and cows**—young and mature females

**Bulls**—male breeding stock

**Steers**—castrated males

**Feeder cattle**—young stock eventually destined to finish gaining weight in commercial or on-farm feedlots

**Stocker cattle**—stock that gain additional weight on forage prior to placement in feedlots

**Fed cattle**—stock ready for slaughter that have been fed a high grain ration diet

**Nonfed cattle**—stock that do not enter feedlots prior to slaughter, but are kept on forage for feed

**Feedlots**—farm or commercial operations (some large commercial operations can feed up to 100,000 head at a time) that place the 600-800-pound feeders in pens and feed them a high grain ration diet composed primarily of a concentrate feed (often corn), protein supplement (such as soybean or cottonseed meal), and some roughage (from silage or hay)

**Feedlot placements**—the inventory of cattle in feedlots at a reported time

**Finishing**—the last stage of production before the cattle emerge from the feedlot and are sent to beef packing plants (the term "overfinished" gener-

ally means cattle have excessive fat-to-lean ratios, and these cattle are often price-discounted)

#### **Hogs:**

**Gilts and sows**—young and mature females

**Boars**—male breeding stock

**Barrows**—young castrated males—about 95 percent of slaughtered hogs are barrows and gilts

There are three types of hog enterprises: farrow-to-finish, feeder-pig, and feeder-pig finishing.

**Farrow-to-finish operations**—includes all phases of slaughter hog production

**Feeder-pig production**—production of pigs and sale of weaned pigs to others for finishing; in this operation, labor is the dominant input cost

**Feeder-pig finishing**—feeding weaned pigs to final weight before slaughter; feed costs dominate input expenses

#### **Poultry:**

**Hatching flock**—breeding stock that produces hatching eggs and some table eggs

**Table-egg flock**—produces eggs for consumption (table eggs)

**Egg layers**—total size of the flock

**Chick placements**—number of chicks raised for broiler output

**Table eggs**—typically unfertile eggs for consumption

**Hatching eggs**—eggs used in broiler production

followed by butteroil, cheese, whole milk powder, and butter. In terms of bonus value, however, butteroil outranked nonfat dry milk for first place.

Limits on the program are on quantities rather than spending authority. In 1992, bonuses may be paid to assist exports of up to 177,700 metric tons of milk powder, 51,800 metric tons of butterfat, and

4,700 metric tons of cheddar cheese to a list of designated countries.

Between mid-January and mid-February of this year, contracts were accepted for the export of 18,000 metric tons of nonfat dry milk during the first half of 1992. Negotiations between exporters and manufacturers tightened market conditions almost immediately, and domestic prices began rising in February. The DEIP-related activity sparked interest in supply commitments by domestic nonfat dry milk users and helped boost winter prices of nonfat dry milk and cheese. With the recently announced addition of Mexico to the list of countries eligible for DEIP bonuses, the program could be quite important for prices and exports in 1992. Mexico is eligible for 25,000 tons of milk powder.

Altogether, for the first 4 months of 1992, USDA accepted bids under the DEIP for nearly 19,000 metric tons of nonfat dry milk and over 10,000 tons of butteroil for calendar 1992. Those two products made up virtually all of the accepted bids. The remainder consisted of small amounts of whole milk powder, butter, and cheese. A total of \$30 million in bonuses was contracted to be paid to 12 firms shipping U.S. dairy products to 15 countries under 48 contracts.

### Summer Broiler Prices To Hold Steady

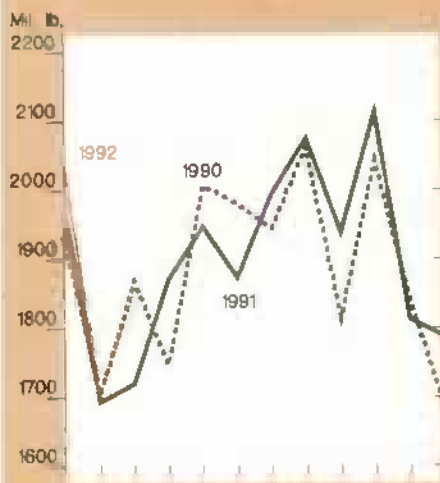
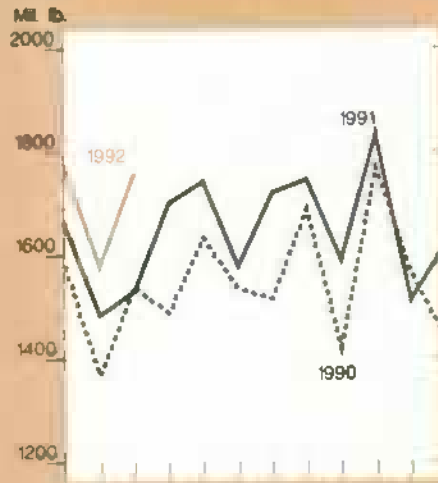
Recent year-over-year changes reported in the size of the hatching-egg flock and numbers of chicks hatched point to continuing increases in broiler production during the second quarter. This will likely keep downward pressure on broiler prices that may average marginally lower than a year ago. Second-quarter production will likely reach 5.2 billion pounds, 3-4 percent more than a year earlier. But the production increase is likely to be less robust than in second-quarter 1991.

Numbers of chicks hatched provide an indicator of production 2 months out; increases for February through April averaged around 4 percent from a year earlier compared with about a 5-percent increase for the same period in 1991. Producers are also moderating increases

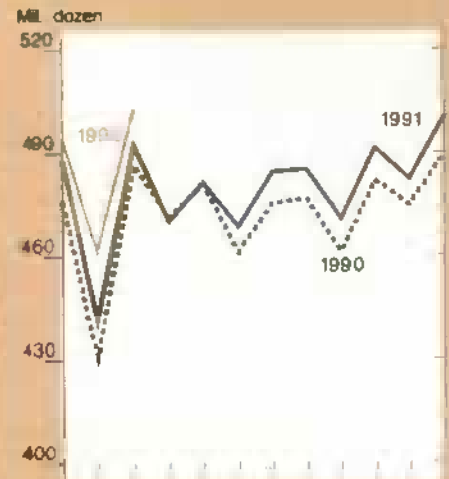
## Livestock &amp; Product Output

## Commodity Overview

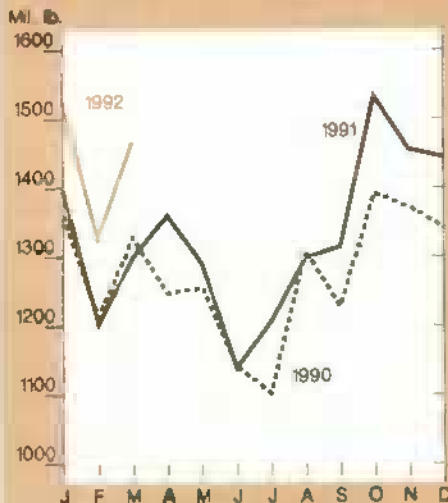
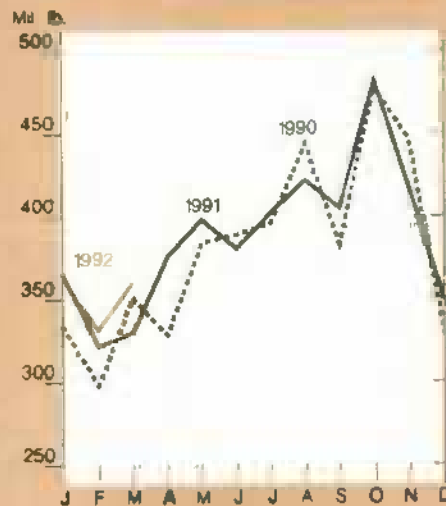
Commercial beef

Broilers<sup>1</sup>

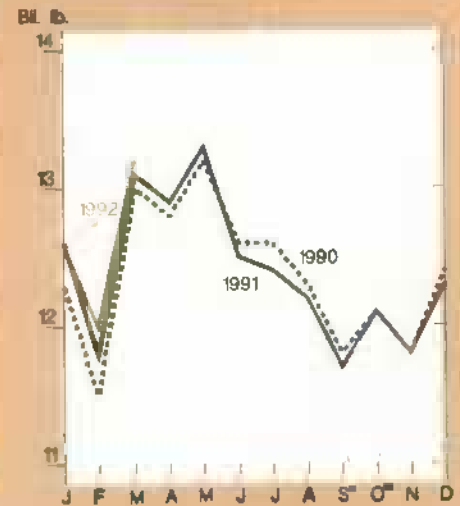
Eggs



Commercial pork

Turkeys<sup>1</sup>

Milk



<sup>1</sup>Federally inspected production, ready-to-cook.

in the broiler hatching-egg flock, a rough indicator of production 3 months out. On both March 1 and April 1, the flock was 3 percent above last year. During the same period last year, the increases in the flock topped 6 percent.

A smaller increase in flock size will be offset somewhat by heavier birds, however. Broiler weights have been averaging 1-2 percent above a year earlier thus far, which will likely continue through the second quarter. In the second half of 1992, these trends are likely to persist, and production increases are anticipated lower than last year.

Despite continuing pressure from heavy supplies of all meats, stronger demand from summer sales and robust broiler exports will help support wholesale prices in the second quarter. May prices for whole broilers rose slightly from April, as retailers and consumers prepared for the Memorial Day holiday. Whole bird prices were also supported by stronger breast meat prices, due to heavy buying by fast food outlets for summer promotions. Some price strength should carry into early summer, as producers reduce the rate of increase in eggs set in incubators, slowing production growth.

Second-quarter wholesale prices will probably hold between 49 and 53 cents a pound. These prices would be slightly above the first quarter, but a few cents below a year ago. Likewise, retail prices for whole broilers during the second quarter are expected 2-3 percent below a year ago, averaging around 86 cents a pound. Lower prices and higher expected feed costs will continue to dampen profitability during the second quarter.

U.S. broiler exports are expected to remain strong in 1992, at about 1.2 billion pounds. Sales to the Pacific region, accounting for about half of total exports, will likely increase, particularly to Japan



## Commodity Overview

and Hong Kong. Larger sales are also likely to Mexico, Canada, the Caribbean, and to the Middle East. Whole broiler exports to the Middle East will be mostly under EEP.

### Egg Industry Ends 3-Year Winning Streak

The egg industry's 3-year streak of favorable prices and returns appears to have ended. New York wholesale prices are averaging well below a year ago, with no signs of firming soon given expected increases in production. The table-egg laying flock for the first quarter averaged over 1 percent larger than a year ago and was younger and more productive. Consequently, first-quarter production increased by nearly 2 percent, and wholesale prices cracked.

New York wholesale prices dropped sharply during the first quarter, averaging 64 cents per dozen, compared with 86 cents last year. These prices were lower than would normally be expected given the level of production increases. A significant rise in egg stocks, particularly frozen eggs, is a contributing factor.

Low prices will likely encourage some flock culling of older hens, but flock size will remain relatively high. Second-quarter production is expected to be close to 2 percent larger than a year ago, with prices likely in the low 60's, below breakeven levels. Producers are expected to continue reducing the flock size, resulting in third-quarter production about the same as last year. Annual production may show an increase of slightly less than 1 percent, and New York wholesale prices may average around 67-71 cents, compared with 77 cents last year.

Consumers will continue to see lower retail prices. Second-quarter retail prices are expected to average in the mid-80's per dozen, down from 93 cents a year ago. Prices are expected to move from the mid-80's to low 90's per dozen as the year progresses, with the highest prices expected in the fourth quarter. The projected average price of around 90 cents per dozen for 1992 would be about 9 percent lower than last year.

### Turkey Stocks Hit Another Record

Poult placements point to turkey production in the second quarter nearly 3 percent above a year ago. Output in the second half is expected to be about 3 percent above last year, as is output for 1992 overall. The relatively slower growth reflects producer losses late in 1991, continuing during the first half of this year. Higher feed costs, 5 percent above a year earlier during the first half, are helping to account for the poor returns. Costs are expected to continue higher in the third quarter but to moderate in the fourth. Net returns in the second half are expected to average slightly above breakeven.

Wholesale prices for Eastern region hens during first-quarter 1992 were nearly unchanged from last year at 56 cents per pound. Prices were aided in part by a special USDA purchase program early in the year. Nearly all of the purchased turkey was distributed through the school lunch program.

Prices for some turkey parts have been braced by relatively strong exports. Second-quarter hen prices are estimated at an average of 58-62 cents, compared with 62 cents last year. In the second half, wholesale prices are expected to firm seasonally, averaging about the same as a year earlier, based on likely continuation of slow growth in production, continued brisk exports, and a stronger economy.

Retail prices on whole birds in the first quarter remained below last year. Consumers will benefit further from bargain prices throughout most or all of this year, due to large competing supplies of ham and other meats.

Turkey stocks at the beginning of the second quarter climbed to a record 391 million pounds, 5.6 percent above a year earlier. Product movement was slow in the first quarter, with consumption estimated slightly lower than last year. Stocks are expected to remain at high levels as turkey production continues to rise, and large and increased supplies of virtually all meats mean that turkey consump-

tion, unlike in many previous years, is not expected to see much increase this year.

### Cattle on Feed Continue Low

The number of cattle on feed on April 1 in the 13 quarterly reporting states was 10 percent below a year earlier, the lowest inventory on this date since 1988. The inventory drop was due largely to a 5-percent decline from a year earlier in the number of cattle placed on feed during the first quarter. Fed cattle marketings rose 2 percent from a year earlier during the first quarter.

The total supply of feeder cattle outside feedlots has remained above year-earlier levels since mid-1991. The increasing supply is largely a function of reduced feedlot placements since early 1991. Placements in 1991 were 7 percent below 1990.

On April 1, the feeder cattle supply outside feedlots was 7 percent above a year earlier, and the largest supply for this date since 1987. The supply of calves less than 500 pounds was about unchanged from a year earlier, while yearlings over 500 pounds were up 26 percent, the largest supply since comparable data were first available beginning in 1973. This large increase is partially due to the lower placements. It also reflects the genetic advances in the industry, with feeder cattle exceeding 500 pounds at a younger age.

Feeder cattle supplies will support larger feedlot placements for the remainder of the year. But when placements will begin to rise and when these cattle will be marketed, expanding beef supplies, is uncertain.

Underlying the uncertainty are tight feed grain supplies and relatively high feed prices, which are likely to persist until the 1992 harvests are more certain. Declining grain prices would encourage larger placements later this summer and fall. But good forage conditions in many areas would result in more cattle remaining on pasture for additional weight gain.



Pasture and range conditions on May 1 were 84 percent in the good-to-excellent range, 5 points above a year earlier and 7 above the 1981-90 average. Only Nevada's pasture and range conditions were rated in the severe drought range. The April 1 snow pack is below to well below average in the West. Summer irrigation prospects in the western third of the country appear poor, although prospects are slightly more favorable in the southern portions of the West.

For further information, contact: Richard Stillman, coordinator; Ron Gustafson, cattle; Leland Southard, hogs; Lee Christensen, Agnes Perez, and Larry Witucki, poultry; Steve Neff and Sara Short, dairy. All are at (202) 219-1285. **AO**

## Field Crops Overview

*The May World Agricultural Supply and Demand Estimates mark the appearance of USDA's first official projections for U.S. and global 1992/93 crops. These projections indicate that U.S. wheat, feed grain, and rice production will likely be up in 1992, while cotton and soybean production will likely be down from 1991's relatively high levels. U.S. ending stocks for all crops except soybeans and barley are expected level or up in 1992/93—in some cases substantially. Global projections call for coarse grain output up 4 percent, and global wheat output up 1 percent from 1991/92. [For the latest market outlook for U.S. field crops, see tables 17-19. The world outlook is in table 23.]*

### 1992 U.S. Wheat Supplies To Be Tight

Prospects for 1992/93 are for a larger U.S. wheat crop, forecast at 2.27 billion bushels. The forecast 14-percent rise in total wheat production is based in part on expected increases in area and higher winter wheat yields. Despite only a marginal increase in planted area, harvested area is expected up this year because of improved weather in many areas and higher wheat prices. And somewhat improved weather in key areas should help increase average winter wheat yields above last year's level.

The *May Crop Production* report provides the first 1992 forecasts for winter wheat harvested area, yields, and production. Overall, winter wheat production is forecast up 18 percent from last year. Harvested area is forecast up 10 percent, while yields are forecast at 37.3 bushels per acre, up from last year's 34.8 bushels.

In two major winter wheat areas—the Pacific Northwest and Southern Plains—winter wheat yields are expected near or somewhat higher than last year, and harvested area is expected up significantly in several states. Harvested area in Washington is expected to be triple last

year's level, and in Texas, up 43 percent. Kansas' harvested area is expected up slightly, while yields are forecast at 33 bushels per acre, the same as last year.

In the soft red winter wheat areas farther east, poor weather has again been a problem, as it was last year. Freezing temperatures in November and March reduced potential yields in Illinois and Indiana. As of May 24 about 20 and 25 percent of the crop in the two states was rated either poor or very poor, and about one-quarter to one-third of the crop in certain areas of these states is not expected to be harvested.

Adverse weather has also plagued Montana and South Dakota, where winter wheat yields are forecast down 23 and 14 percent. Because of dry conditions, 43 and 34 percent of the hard red winter crops in those states was rated poor or very poor as of May 24. Dry weather has also been a problem in western Kansas and Nebraska. As of May 24, 30 and 54 percent of the winter wheat crop in those two states was rated poor or very poor.

Even with a larger overall wheat crop expected in 1992, total wheat supplies are forecast to be the lowest since 1975/76, in part due to the relatively small carryin. Supplies for the season are forecast at 2.73 billion bushels, more than 5 percent below last year's level.

With relatively tight supplies, prices for the season are forecast at \$3.15-\$3.55 per bushel. Partly in response to the higher prices, total wheat use in 1992/93 is projected down 7 percent from a year earlier, at 2.28 billion bushels. Exports are projected down 50 million bushels, and feed use is forecast down 150 million bushels. Ending stocks for the 1992/93 season are forecast up slightly, to 449 million bushels.

While winter wheat producers are harvesting the 1992 crop, spring wheat producers are watching their crops emerge. As of May 24, almost 80 percent of the Minnesota crop had emerged, while emergence in South Dakota had reached 100 percent. Crop progress was ahead of the average for that date in most areas except Minnesota, where wet soils delayed planting.

## ■ Livestock and Poultry Update

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## Commodity Overview

Wrapping up the 1991/92 crop year that ended May 31, U.S. wheat output totaled 1.98 billion bushels, down about 28 percent from the previous year. With total use forecast up slightly less than 1 percent from a year earlier, ending stocks on May 31 are estimated at 421 million bushels, the lowest level since 1973/74. The marketing year weighted-average price is estimated at \$3.00 to \$3.05, up from \$2.61 in 1990/91.

### 1992/93 World Wheat Forecast Up

World wheat production in 1992/93 is projected at 549 million tons, up 1 percent from 1991/92. The major increases are expected to occur in the former USSR and the U.S. With world carryin stocks projected down 9 percent, and production and consumption nearly in balance, 1992/93 ending stocks are projected down marginally. The global stocks-to-use ratio is projected to match 1991/92 at 23 percent.

Global trade is projected to decline 5 percent to 102 million tons, largely because of a projected 33-percent decline in imports by the former Soviet republics. However, increased imports by China and North African countries will likely offset some of this decline.

Competitor exports are expected to increase. The EC and Canada are starting the year with large stocks, which will aid exports despite lower output. The EC is forecast to produce a crop slightly less than the record of 1991/92, while Canada's output is forecast down 9 percent. These declines will be more than offset by a forecast 55-percent production increase in Australia and a projected 11-percent output gain in Argentina, as the former recovers from a dry year and both respond to higher prices. U.S. exports are projected at 32.5 million tons, and market share will remain about the same as in 1991/92, at 32 percent.

### 1992 U.S. Corn Stocks To Rebound

Prospects for 1992 are for a larger U.S. corn crop, with the first USDA projection

## Corn Trend Yields—How Useful Are They?

With beginning 1992 feed grain stocks at their lowest level since the 1983/84 drought, attention will focus on potential 1992 production. The March *Prospective Plantings* report indicated a 3-percent increase in plantings of all feed grains, with corn plantings indicated up 4 percent. Yield prospects and harvested area are the other main factors that determine production potential.

USDA's May projection for the 1992 corn crop calls for nearly 8.6 billion bushels—a 15-percent boost over 1991 production. Crop projections will continue to be revised through the coming months as new information on crop conditions becomes available. As of May 24, with 4 percent of the crop still to be planted, analysts look at factors like trend yields and historical relationships between area planted and harvested, in order to evaluate production potential.

Trend yields may be computed in several ways—a simple moving average over a period of years is an example of a trend yield. Other trend yields may be based on more sophisticated statistical techniques.

Trend yields largely reflect historical patterns of inputs used by producers. Input use in turn is affected by a host of factors such as input prices, expected crop prices, and government program variables like acreage reduction levels, program yields and acres, and price supports.

In recent years, a number of industry analysts have suggested that input use, and thus yield potential, has been affected by policy changes since the mid-1980's that encourage producers to focus more on market signals than on commodity support levels. Two policy changes cited are the freezing of program yields—used to calculate deficiency payments for income support—and the introduction of normal flex acres, which generally receive no deficiency payments.

Other factors that may affect input use rates include heightened environmental awareness, environmental regulatory controls, increased application of soil fertility tests, conservation practices, crop rotations, use of non-commercial sources of nutrients, increased use of denitrification inhibitors (which keep nitrogen available to the plant for a longer period), and plant genetics.

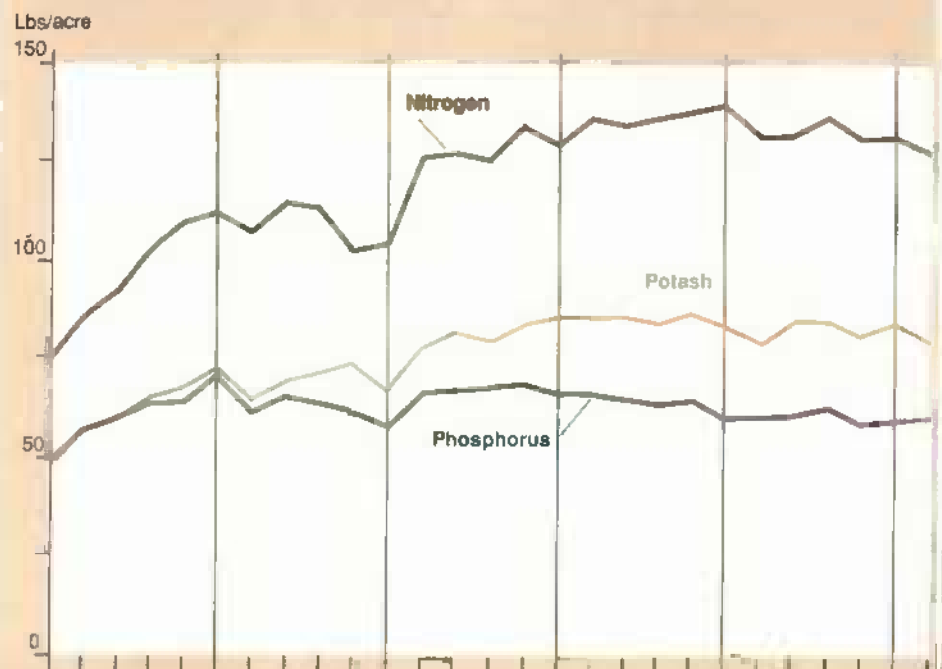
As these factors change, input use may vary, influencing trend yields over time. Some of these factors are practices that may substitute for commercial fertilizers in enhancing yield potential.

In fact, commercial fertilizer application rates have generally declined since the mid-1980's. U.S. farmers applied an average of 140 pounds of nitrogen per acre to corn in 1985 compared with 128 pounds in 1991. Potash application rates have declined from 83 pounds per acre to 76 between 1984 and 1991, while phosphorus usage declined from 66 pounds per acre to 62 pounds over the same period.

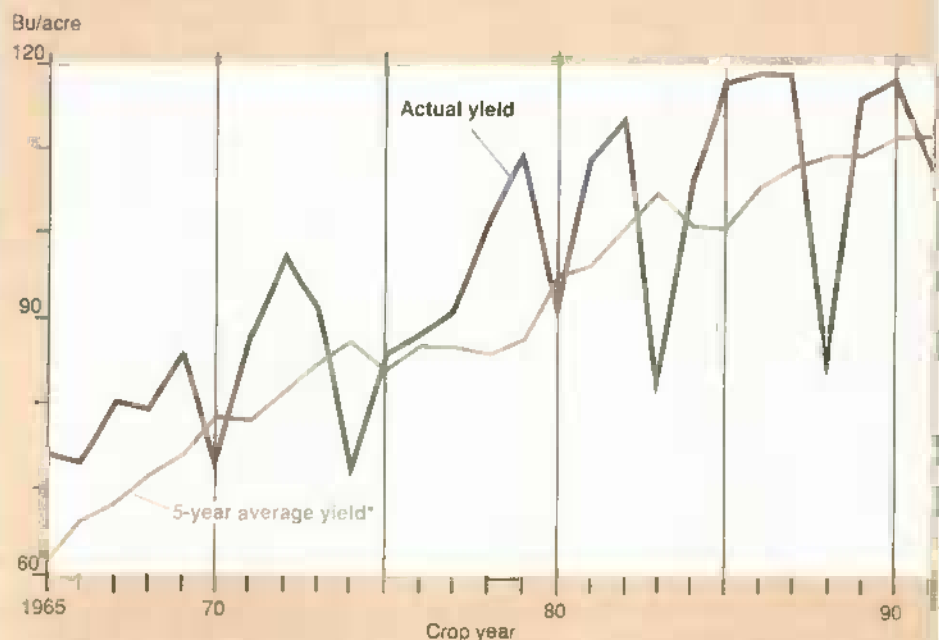
But while fertilizer application rates have declined, future yields are not expected to deviate substantially from historical trends. The use of alternative nutrient sources, such as compost, have at least partially offset reduced yield potential that might have occurred with lower fertilizer use rates. Furthermore, other yield-enhancing technologies continue to be developed and applied, suggesting that future yield increases under average weather expectations are still attainable. Thus, trend yields remain a useful tool for evaluating production potential before crop condition information becomes available. *[Tom Tice (202) 219-0840]*

## Commodity Overview

Growth In Fertilizer Application Rates for Corn Slowed In the 1980's . . .



... But Corn Trend Yields Continued To Climb



\*Computed from preceding 5 crop years.

Source: USDA.

calling for nearly 8.6 billion bushels, a 15-percent rise over 1991's estimated production. The expected production increase is due in part to larger area, based on the March *Prospective Plantings* report.

The larger expected corn area is due to a lower acreage reduction program (ARP)—down from 7.5 to 5 percent—and relatively favorable corn net returns compared with soybeans. The soybean-to-corn ratio of farm prices averaged 2.4 from January to April of 1992, the lowest level for that period since 1986. These factors are likely leading farmers to increase corn plantings instead of soybeans, particularly on corn flex acres.

Total corn use in 1992/93 is projected at just over 8 billion bushels, up 2 percent from the estimated level for 1991/92. Corn feed and residual use is projected up 100 million bushels due to relatively tight supplies projected for barley and oats, higher expected wheat prices and lower corn prices, and a moderate increase in meat production. Food, seed, and industrial use is projected up 40 million bushels, stemming largely from the stronger economy and greater use of ethanol in gasoline blends. Exports are expected to remain unchanged.

With a projected rebound in production and slightly higher use, ending stocks are forecast to rise to 1.67 billion bushels in 1992/93, almost 50 percent above the 1991/92 estimated carryout of 1.12 billion bushels. Given the expected rebound in production and stocks, prices for the 1992/93 season are projected at \$1.90 to \$2.30 per bushel, below the range of \$2.30 to \$2.50 estimated for 1991/92.

As with corn, production of sorghum and oats is also projected to increase in 1992, to 700 million bushels and 275 million bushels. In contrast, a lower prospective planted area for barley is expected to lead to a drop in production in 1992, to 420 million bushels, versus 464 million in 1991.

Planting progress for corn and sorghum as of May 24 was well ahead of schedule in most areas. By that date, 96 percent of the corn crop had been planted



## Commodity Overview

(compared with an 89-percent average), and 57 percent of the sorghum crop was in the ground (ahead of the 46-percent average).

### World Coarse Grain Trade Could Shrink

Global production of coarse grains is projected to increase 4 percent in 1992/93, to 834 million tons. The U.S. is expected to account for much of the increase. Foreign coarse grain production is projected at 585 million tons, up nearly 5 million from 1991/92. The most significant gains are likely in the former Soviet Union. On the other hand, a substantial decline is likely in Eastern Europe. Among competing exporters, the outlook calls for relatively little change in aggregate production, with increases among individual countries projected to outweigh declines. The major change likely is in South Africa, where recovery from this year's drought is projected to boost output by more than 5 million tons.

World trade in coarse grains is projected to decline 5 percent. Imports by the former Soviet Union are projected at 12

million tons. For Japan, currently the world's largest importer, flat imports are projected as increased meat imports keep a lid on growth in domestic feed use. South Korea's corn imports are projected up in 1992/93, assuming continuation of strong growth in domestic feed demand and some drop in imports of wheat for feed. Relatively large imports by southern African countries are expected to continue because of the impact of the 1991/92 drought.

U.S. coarse grain exports are projected at 48.2 million tons, unchanged from the 1991/92 forecast, and market share is projected to show some recovery—from last year's 53 percent—to 56 percent. China, with large supplies, is projected to remain the leading foreign corn exporter, followed by Argentina.

### Soybean Output Expected Down Slightly

Prospects for 1992 are for a smaller U.S. soybean crop, projected at 1.92 billion bushels, down almost 4 percent from 1991. The projected production decline is due in part to smaller expected area.

For most of the 1991/92 crop year, prices for corn have been favorable compared with soybeans. As a result, farmers will likely increase corn plantings instead of soybeans, particularly on corn flex acres.

Total soybean use in 1992/93 is projected at 1.98 billion bushels, down 2 percent from last year. Although both crush and exports are expected to decline slightly, the projected levels are relatively high compared with recent history. With soybean supplies projected down almost 5 percent in 1992/93, and continued strong use, ending stocks are projected at 235 million bushels, 20 percent below the forecast level for 1991/92 ending stocks. Soybeans are the only U.S. crop—except barley—for which USDA is projecting a drop in 1992/93 ending stocks.

As of May 24, 68 percent of the U.S. soybean crop had been planted, ahead of the 49-percent average for that date. In Illinois, Indiana, and Iowa, over 80 percent of the crop had been planted, well ahead of planting progress in most other areas.

World oilseed production in 1992/93 is projected down about 1 million tons to 223 million. Soybean production is projected to decline only slightly, while cottonseed faces a modest decline. Decreases in rapeseed, flaxseed, and copra production are offset by projected gains in sunflowerseed and peanut production.

Below-trend growth in foreign soybean production will aid export prospects for the U.S. soybean complex. Constrained growth in foreign demand, however, will lead to declines in U.S. soybean and soybean meal exports. U.S. soybean exports in 1992/93 are forecast down slightly to 17.7 million tons, while U.S. soybean meal exports are projected to slip to 5.6 million tons.

### Cotton Crop Down From 1991 Record

Prospects for 1992 are for a slightly smaller U.S. cotton crop, projected at 17.2 million bales. This forecast is down 2 percent from 1991's near-record level.

USDA Projects Higher World Grain Output for 1992

Crop	Production	Trade <sup>1</sup>	Consumption	Ending stocks
Million tons				
Total grain				
1991/92	1,688.8	210.9	1,712.2	315.5
1992/93	1,737.0	— <sup>2</sup>	1,724.2	328.4
Wheat				
1991/92	541.6	107.3	554.6	129.8
1992/93	548.6	102.1	550.2	128.2
Rice, milled				
1991/92	348.5	13.4	352.0	55.9
1992/93	352.3	— <sup>2</sup>	354.0	54.2
Coarse grains				
1991/92	798.7	90.1	805.7	129.8
1992/93	834.0	86.3	819.5	144.3
Corn				
1991/92	479.7	60.3	482.3	79.3
1992/93	509.2	57.9	496.2	92.3
Million 480-lb. bales				
Cotton				
1991/92	95.2	23.0	85.7	38.2
1992/93	94.0	24.0	89.0	43.1

<sup>1</sup> Trade excludes intra-EC trade. Trade year for coarse grains is October/September, for wheat July/June, and for rice the calendar year following harvest. <sup>2</sup> Rice trade for calendar year 1993 will be estimated in July.

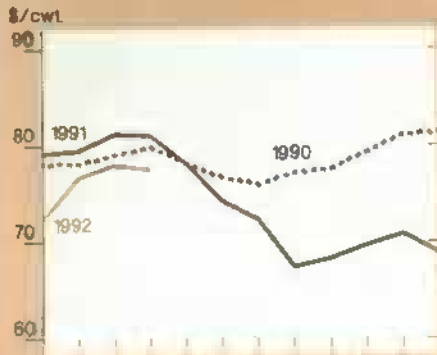




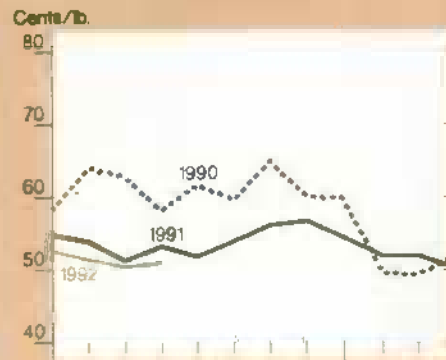
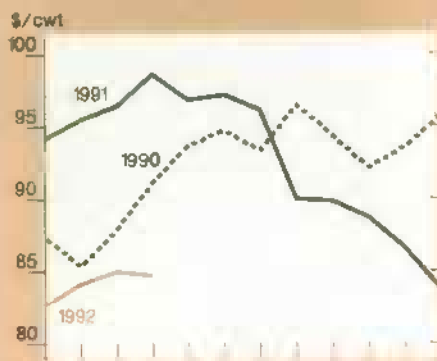
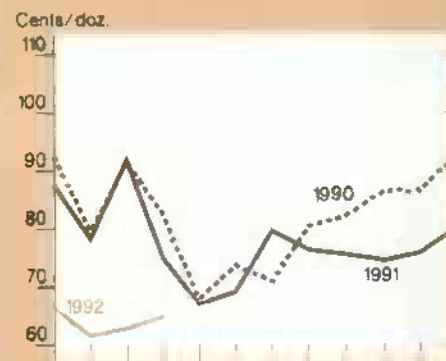
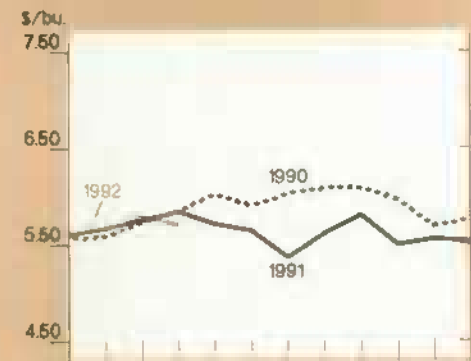
## Commodity Overview

## Commodity Market Prices

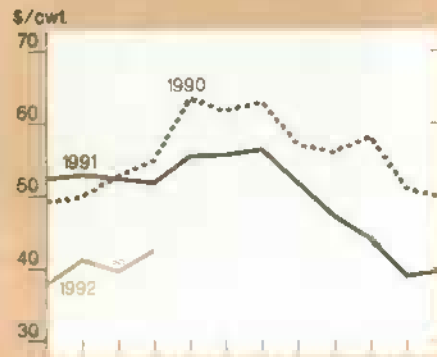
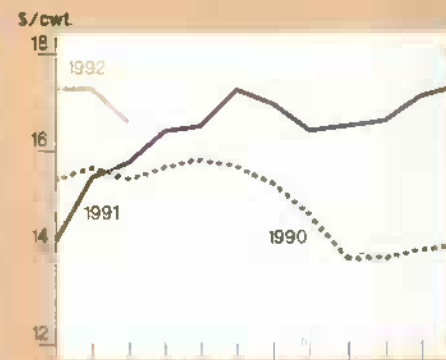
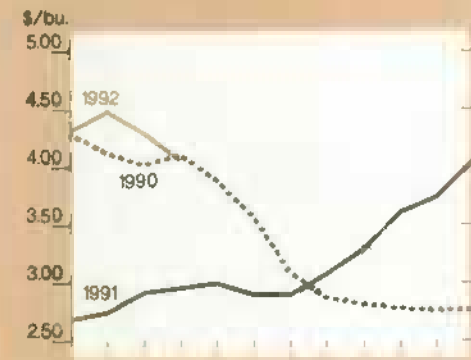
Choice steers, Nebraska



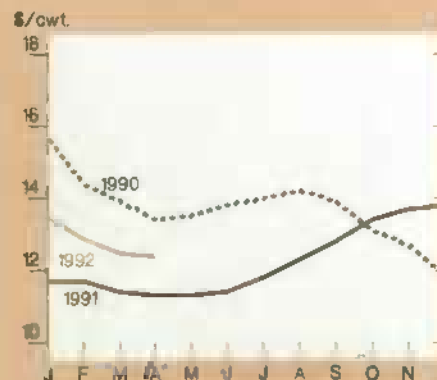
Broilers, 12-city average

Corn, Central Illinois<sup>1</sup>Medium steers, Oklahoma City<sup>2</sup>Eggs, New York<sup>3</sup>Soybeans, Central Illinois<sup>4</sup>

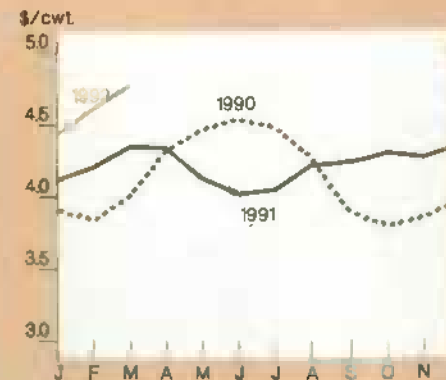
Barrows and gilts, 8 markets, Omaha

Milled rice, SW Louisiana<sup>5</sup>Wheat, Kansas City<sup>6</sup>

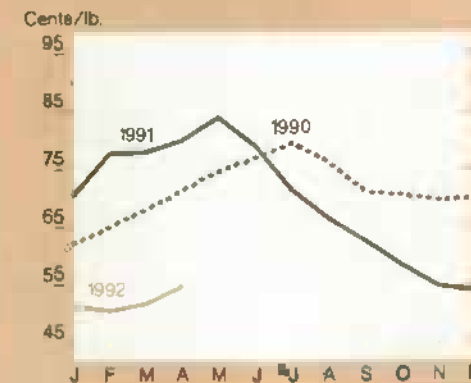
All milk



Sorghum, Kansas City



Cotton, average spot market



The projected production decline in 1992 is due in part to the expectation of smaller planted area.

Two factors are likely working to pull down planted area. First, the upland cotton ARP for 1992/93 is 10 percent, up from 5 percent in 1991/92. Second, a comparison of net returns shows cotton relatively less attractive in many areas than some other crops, such as sorghum and corn.

Total cotton use in 1992/93 is forecast at 16.5 million bales, up nearly 2 percent from last year. Domestic use is forecast at 9.5 million bales, up 1 percent, as mill use remains strong. U.S. exports are also projected to rise in response to strong global use.

With continued strong production and slightly higher total use, ending stocks in 1992/93 are projected at 4.7 million bales, 21 percent above 1991/92's estimate. The 1992/93 stocks-to-use ratio is projected at 28.5 percent, up from this year's 24.1 percent.

As of May 24, 79 percent of the 1992 crop had been planted, well ahead of the 69-percent average. Planting was complete by that date in California and Louisiana.

## '92 World Cotton Output Projected Down

With global stocks up 33 percent in 1991/92 and prices low, world cotton production in 1992/93 is projected down slightly to 94 million bales. Although output is off, it is still projected to be the second largest historically. Most of the drop is expected in yields—forecast to return to more normal levels after the 1991/92 record.

But lower prices are also expected to encourage continued strong consumption. Global use is projected up nearly 4 percent to 89 million bales, a new record. Even though much of the gain in use will occur in producing countries, importers' consumption is projected strong enough to boost trade. Nevertheless, global ending stocks are projected to increase again, reaching 43 million bales.

## What Year Is This?

The outlook for crops is generally reported in marketing years. A marketing year straddles two calendar years, and is identified by a combination such as 1991/92. For most crops, the marketing year begins around harvest time. The 1991/92 rice crop, for example, refers to the crop that is harvested in the fall of 1991, and marketed through 1992. Unless otherwise indicated, the phrase "1991 crop" refers to the crop harvested in the 1991/92 marketing year.

Different crops have different marketing years, and the marketing years vary across countries. World totals, reported in the appendix tables, are sums of individual country figures, so they do not represent a uniform year. In the U.S., the marketing years for the major field crops begin:

June 1—for wheat, barley and oats;

August 1—for rice and cotton;

September 1—for soybeans, corn, and sorghum;

October 1—for soybean meal and soybean oil.

Foreign output is projected down 1 percent to 76.8 million bales. Stronger use, however, is anticipated—consumption is projected at 79.5 million bales, a 4-percent gain. And foreign stocks, projected up 4 million bales to 38.3 million, will account for most of the projected world stock gain.

Foreign exports are also projected up, reaching 17 million bales, a 5-percent gain. Despite greater foreign competition, U.S. exports are projected up 200,000 bales to 7 million. But U.S. market share is expected to contract to a more average 29 percent from nearly 30 percent in 1991/92.

## Expectations For More Rice

Prospects call for a larger U.S. rice crop in 1992, currently forecast at 166 million cwt. The projected production increase is due largely to an expected increase in

area. Producers' incentives to increase rice plantings include a smaller ARP level, improved water supplies in critical areas, and favorable planting weather.

Favorable planting weather has been paramount to producers in the South, where wet weather last spring reduced plantings. As of May 24, about 95 to 100 percent of the crop in the South had been planted—well ahead of last year's pace.

Total U.S. rice supplies are forecast to increase nearly 18 million cwt in 1992/93, largely because of the projected production increase. This situation is expected to put downward pressure on U.S. prices, reducing the U.S. premium to around \$1.25 per cwt above world prices. For 1991/92, the premium is expected to average about \$1.60 per cwt. Season-average prices in 1992/93 are projected to range between \$6.50 and \$7.50 per cwt, compared with \$7.45-\$7.65 in 1991/92.

Total rice use in 1992/93 is forecast at 169 million cwt, up 9 percent from last year. Exports are expected to rebound to 70 million cwt in part because of the forecast larger supply and lower prices. Domestic use is expected to show continued growth. Ending stocks are forecast at nearly 34 million cwt, resulting in a stocks-to-use ratio of 20 percent.

World rice production is projected to be 352 million tons (milled basis) in 1992/93, 1 percent above a year earlier. Foreign output is projected at 347 million tons, up 1 percent. Global exports in calendar year 1992 are forecast at 13.4 million tons, up from a year ago, reflecting increased imports by Indonesia. [Joy Harwood (202) 219-0840 and Carol Whitton (202) 219-0824]

**For further information, contact:** Sara Schwartz, world food grains; Edward Allen, domestic wheat; Janet Livezey, domestic rice; Pete Riley, world feed grains; Tom Tice and Jim Cole, domestic feed grains; Nancy Morgan, world oilseeds; Roger Hoskin and Scott Sanford, domestic oilseeds; Carol Whitton, world cotton; Bob Skinner and Les Meyer, domestic cotton. World information (202) 219-0820, domestic (202) 219-0840. **AO**

## Commodity Overview

## Specialty Crops Overview

*The U.S. orange production estimate for 1991/92 exceeds earlier forecasts because larger-than-expected fruit size is boosting California's output. Noncitrus fruit trees and vines survived the winter and spring with minimal damage, setting the stage for a large noncitrus crop in 1992. Also signaling a large 1992 fresh strawberry crop are good crop conditions in California and 5 percent more acreage nationwide.*

*Early intentions suggest vegetable growers plan to cut acreage of dry edible beans and processing vegetables (especially processing tomatoes). U.S. aquaculture continues breaking output records, led by rising catfish production. [For the latest outlook for specialty crops, see tables 20-22.]*

### Winter Rains Produce Larger Oranges

USDA has boosted its forecast of California's 1991/92 navel and Valencia orange production by 6 million boxes since January 1. Winter rains helped yield a fruit size that was larger than expected. The May 1 forecast, made with 86 percent of the crop harvested, placed California's navel production at 35 million boxes, up 122 percent from the freeze-reduced output of last year but 21 percent below 1989/90. California's forecast Valencia output for the 1991 season is 31 million boxes, triple the meager 1990/91 crop, and 14 percent larger than 1989/90. Industry sources report a "good" to "excellent" bloom this spring.

The May 1 forecast for Florida's 1991/92 all-orange crop stands at 139 million boxes, down 8 percent from last season. Florida's oranges are reportedly also carrying a "good" to "excellent" bloom this spring. With the jump in California's production more than offsetting the decline in Florida's output, estimates of

total U.S. orange production for 1991/92 rose 13 percent (tonnage) from the previous year's output.

USDA projects the frozen concentrated orange juice (FCOJ) yield for Florida at 1.54 gallons (42 degrees brix) per 90-pound box of oranges. The yield for 1990/91 averaged 1.45 gallons per box.

FCOJ prices weakened during April as reports began surfacing that Brazilian processors would increase the forecast for Sao Paulo's 1992 orange production. Sao Paulo produced 250 million boxes of oranges in 1991. Prospects for larger orange crops in both Brazil and the U.S. represent bearish news for futures prices, as the two countries produce over 80 percent of the world's processed orange juice.

### Mild Winter Favors Nuts, Noncitrus Fruits

Generally good growing conditions last winter in most major noncitrus fruit states will favor 1992 crops. No severe winter damage occurred in California

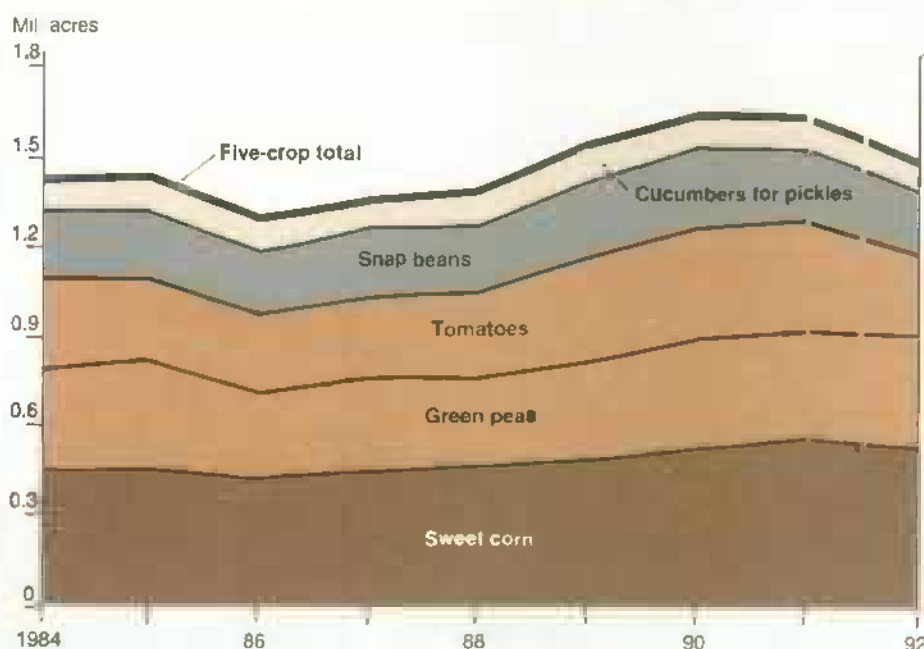
where early peach, plum, and nectarine crops showed good development early in May. Apples, cherries, and pears bloomed several weeks ahead of schedule in Oregon and Washington due to the mild winter.

Most Northwest fruit areas reported little or no frost damage during the spring bloom. Production from new plantings, which are entering commercial bearing age, will contribute to higher production in 1992, but less than ideal weather for pollination in Washington has reduced prospects for a bumper crop.

A hard freeze in March in southwest Michigan reportedly killed some fruit buds among peaches, apples, cherries, and plums. Fruit crops in the central and northwest parts of the state escaped serious damage because the fruit buds on trees had not developed sufficiently to be damaged by the cold.

Mild winter weather benefited apple orchards and grape vineyards in New York. Vigorous new growth indicated the vineyards recovered satisfactorily following the dry summer in 1991.

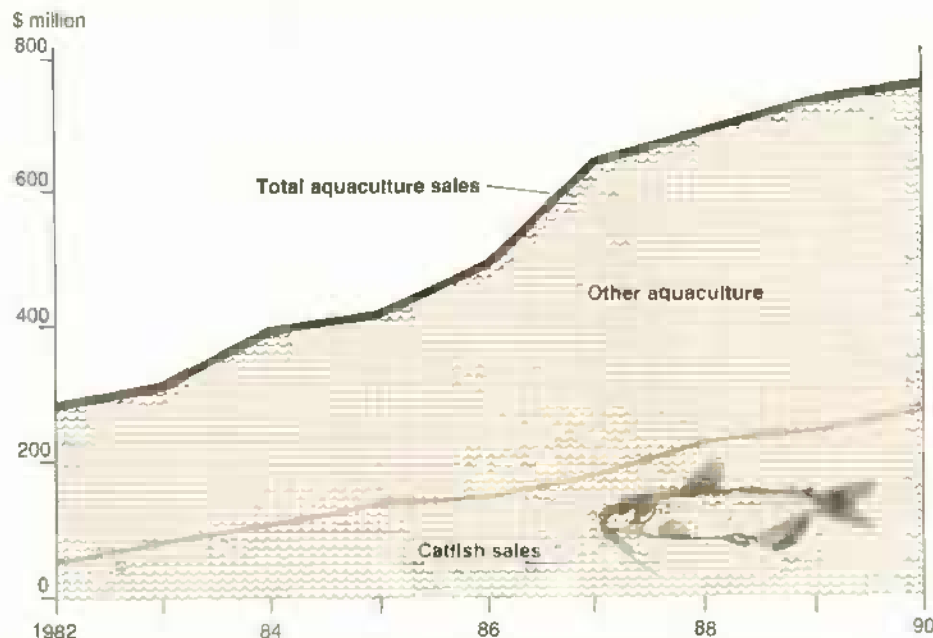
Planted Area for Most Processing Vegetables To Fall In 1992



1992 area is based on contracted acreage, reported in *Vegetables*, USDA, April 1992.



### Catfish Accounts for Over a Third of Aquaculture Sales by Farmers



Other aquaculture products include trout, crawfish, hybrid striped bass, tilapia, salmon, mollusks, shrimp, and ornamental fish.

As of May 1, almond production for 1992 is forecast to reach 570 million pounds, shelled basis, 16 percent higher than 1991 but lower than industry expectations. Cool weather and fog during pollination may have reduced production potential.

### Strawberry Area Up, Processed Vegetables Down

Area planted to strawberries in 1992 is estimated at 38,000 acres, up 5 percent from last year. California growers report 23,000 acres, up 9 percent. Oregon and Washington growers report 9 and 14 percent more acreage in 1992. If growing conditions continue good, 1992 California strawberry output could equal or exceed last season's record 11.3 million cwt.

Grower prices for fresh strawberries declined seasonally during March and April. Abundant supplies from California likely will keep prices at or below year-earlier levels through most of the summer. F.o.b. prices last June and July

remained in the range of \$4-\$5 per 12-pint flat, which reportedly represents about the minimum to cover growers' costs for harvesting, packing, and selling.

Contracting intentions for the major processing vegetables declined 8 percent from 1991 acreage, due mostly to a 25-percent decline in processed tomatoes. Compared with last year, vegetable processors indicate they plan to contract for 10 percent less snap bean acreage, 3 percent less of both sweet corn and cucumbers for pickles, but 2 percent more green pea area. Contracted acreage provides a good indicator of likely plantings because processors contract for most of the vegetables they buy. In 1991, processors contracted for 98 percent of total acreage.

Planting intentions reported for dry edible beans plummeted 22 percent from last year's acreage, with Navy and pinto bean areas leading the decline. Although the first estimate of fall potato acreage will not be available until July, acreage is expected to fall in 1992 following depressed prices for the 1991 crop.

### Catfish Leads Aquaculture Expansion

Led by an 8-percent jump in catfish product sales, U.S. aquaculture output expanded again in 1991. Catfish production, the largest sector of the aquaculture industry, has grown rapidly in the last 10 years. Grower sales made during the first quarter of 1992 alone exceeded total catfish sold in 1982 by 21 percent. Catfish processor sales also expanded in 1991, up 9 percent from 1990, to 200 million pounds. Thus far, 1992 sales continue to rise. Processor sales during the first quarter rose 23 percent from 1991's first quarter.

Last year's rapid growth in processor sales was aided by farm prices 17 percent below the year before. Falling prices in 1991 led to a drawdown in inventories and price increases in early 1992, which may slow this year's sales growth. Farm prices in March were 60 cents a pound, up from 53 cents in January, but 13 percent below March 1991. Last year, farm prices averaged 69 cents in the first quarter and 63 cents for the entire year.

Inventories of small and medium food-size catfish in the four major producing states (Mississippi, Alabama, Arkansas, and Louisiana) on April 1 stood 9 and 53 percent ahead of year-earlier levels. Inventories of stockers and fingerlings fell 5 and 26 percent from the year before. These inventory figures show adequate stocks through mid-1992, but point to a slowdown in production and higher prices in the second half of 1992, into 1993.

Although catfish dominates the domestic aquaculture industry in output and sales, growth in Maine's salmon industry in the past 4 years was also notable. In 1991, Maine producers sold 10.4 million pounds of salmon. Maine more than doubled its salmon production in each of the last 3 years, rising from less than 1 million pounds in 1988. Future expansion is limited by a scarcity of areas with the needed combination of water temperature, high tidal flushing action, and water depth.

## Commodity Overview

Domestic aquaculture, especially catfish, is expected to continue growing in 1992. Expansion in salmon, mollusk, shrimp, and other fish species such as tilapia and hybrid striped bass should contribute to the overall growth in domestic aquaculture in 1992. Most of the growth in catfish output will come from higher yields from existing ponds. Low farm prices in 1991 curtailed expansion plans for most farmers. ]Glenn Zepp (202) 219-0883]

For further information, contact: Dennis Shields and Diane Bertelsen, fruit and tree nuts; Gary Lucier, vegetables; Peter Buzzanell, sweeteners; Doyle Johnson, greenhouse/nursery; Verner Grise, tobacco; David Harvey, aquaculture; Lewrene Glaser, industrial crops. All are at (202) 219-0883. **AG**

### June Releases from USDA's Agricultural Statistics Board

The following reports are issued at 3 p.m. Eastern time on the dates shown.

#### June

- 2 Minn.-Wis. Mfg. Grade Milk - Final 1989-91
- 3 Egg Products
- 5 Celery (1 p.m. report)
- Dairy Products
- Poultry Slaughter
- 8 Vegetables
- Vegetables - Annual
- 10 Crop Production
- 12 Farm Labor
- Turkey Hatchery
- 15 Milk Production
- 19 Cattle on Feed
- Livestock Slaughter
- 22 Catfish
- Cold Storage
- Acreage of Processed Vegetables
- 23 Eggs, Chickens & Turkeys
- 25 Agricultural Chemical Usage
- Cherry Prod.
- 29 Agricultural Prices
- Agricultural Prices - Annual
- Peanut Stocks & Processing
- 30 Acreage
- Almond Prod.
- Grain Stocks
- Hogs & Pigs

## Commodity Spotlight



## Mushrooms Cap a Decade Of Growth

**M**ushrooms are a multimillion-dollar U.S. business, but growers face a number of challenges arising from increasing environmental sensitivity. How do the challenges differ from those facing most agricultural producers?

First, recycled waste from other agricultural enterprises forms the key input to mushroom production—compost. But though the compost recycles waste into a productive use, the used or spent compost (mushroom soil) can pose disposal problems for some counties and areas.

Second, a mushroom is not a green plant, but a fungus. Creating the optimal environment for growing mushrooms also creates a friendly environment for pests, including unwanted fungi. Relying on chemicals has put mushroom growers in a pesticide dilemma similar to that facing

other producers—especially minor use crop producers. (See the May AO article, "Pesticides—Balancing Risks, Benefits.") Environmental challenges are changing the way mushroom growers do business—and changing the shape of the industry.

### Fewer Growers, Expanding Output

The U.S. is the world's largest mushroom producer, with 21 percent of the world's 3.3 billion pounds in 1990. U.S. mushroom production reached 756 million pounds in 1990/91, increasing nearly 5 percent per year over the past decade. Mushrooms ranked fifth among vegetable cash receipts in 1990, after potatoes, tomatoes, lettuce, and dry beans. Sales totaled \$671 million in 1990/91, up slightly from the previous year, but nearly double a decade earlier.

Although 26 states produce mushrooms, Pennsylvania produces the lion's share—47 percent—and California is a distant second with 17 percent of U.S. output. Recent reports indicate capital and operating expenses run about \$23,000 per crop for an 8,000-square-foot "double"—a typical mushroom house size in Pennsylvania. An average crop yields 5.3 pounds per square foot.

Since the early 1980's, the industry has become concentrated among fewer growers as the cost of doing business exceeded revenues generated for nearly half of the growers. Between 1983 and 1990, the number of mushroom growers shrank from 440 to 238. In the last decade, large multiproduct corporations, like Ralston-Purina and Clorox, have left the mushroom industry and large, specialized firms, like Campbell's and Monterey Mushrooms, have dominated. Mushroom producers and industry observers both agree that important factors contributing to the decline in the number of growers include low profit margins and increased costs of pest control and environmental compliance.

## Compost: One Man's Garbage...

Compost, the growth medium of mushrooms, is a big issue for growers who buy tons of ingredients weekly and create tons of spent mushroom compost (SMC) annually. The industry is looking for new ways of producing and disposing of compost that address issues ranging from water quality to relations with neighbors who view compost as a health hazard.

Compost is made from recycled materials left after production of other crops, or from livestock operations. Key ingredients include hay, corn cobs, horse or other manure, straw, and other organic farm ingredients. The ingredients must be turned and watered daily to promote growth of favorable microbes, which convert the mixture into a rich, dark brown medium suitable for mushrooms. The compost must be sanitized to eliminate unwanted pests and molds, then cooled, inoculated with spawn (mushroom seed), and incubated for 2 weeks. After the last crop of mushrooms is picked, usually the third crop, the compost is no longer productive and must be removed so a new cycle—which lasts about 90-100 days—can be started.

How a grower handles spent compost after a harvest cycle depends on the location of the operation and demand for spent compost. For generations, spent mushroom compost has been spread on land as a soil ameliorant to improve soil tilth, and to provide nutrients which are slowly released over a period of 4 to 6 years. But application on fields becomes a problem when nearby neighbors view compost as nuisance or even a health hazard—despite research providing evidence to the contrary.

Chester County, for example, is Pennsylvania's largest mushroom producing county, with about 133 mushroom farms and a population of nearly 377,000. Spent compost is regulated by Pennsylvania's Department of Environmental Resources (DER). Compost is still considered an agricultural waste, not a residual waste, and the DER allows it to be spread or stockpiled on land in Chester

County without a use permit. (A residual waste classification would put compost in the "hazardous" waste category, requiring permits and fees for disposal.)

Adjacent Lancaster County, however, has a much smaller ratio of farm to non-farm neighbors, with only three mushroom farms and a population of 423,000. A recent cease-and-desist order for a Lancaster farm followed allegations by neighboring residents of health problems that included skin rashes, breathing problems, and even loss of sight from the spreading of spent compost trucked in from Chester County. However, an investigation by Pennsylvania Health Department officials and the Centers for Disease Control concluded that no components of the compost could cause the health problems.

Buyers of weathered, or matured SMC, however, use it as mulch for ornamental, flowering, and vegetable crops, and incorporation into soils as a fertilizer—either for crop production or for home lawn use. Another growing use of SMC is for land reclamation of old strip mines and construction of wetlands for water treatment. Growers have traditionally weathered spent compost by spreading it on fields. More controlled processes for

maturation are now being explored by growers. Some growers, for example, mature SMC and control leaching by using a portion of a mushroom operation's existing wharf (a concrete slab where compost is made) to turn the SMC.

In California, spreading of spent compost is not as widespread. Rather, California growers are hard pressed at times to meet the seasonal demands from homeowners, landscapers, and nurseries to buy the spent compost. In Pennsylvania, on the other hand, the large amount of compost generated together with a shorter landscaping season results in the need to stockpile compost.

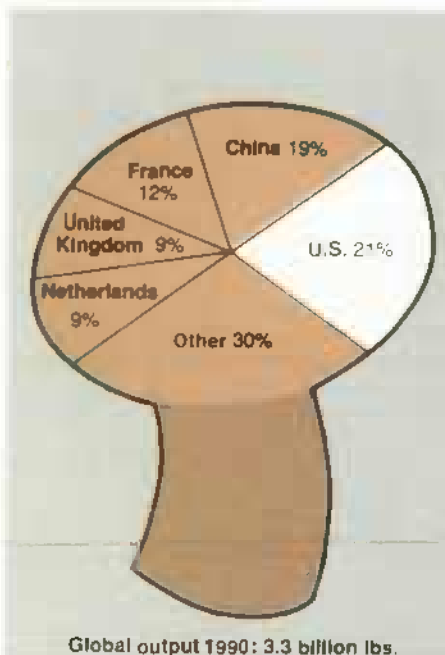
As for water quality, research recently completed at Pennsylvania State University evaluated the potential for reducing water contamination arising with runoff from spent compost. The research showed that SMC contains no herbicides or nematocides, the two pesticide groups found most often in contaminated well water. SMC is also very low in nutrient runoff, although nutrient runoff is the area of concern. Still, improvements can be made to the wharf and stockpile areas to minimize potential damage to water quality—such as adding vegetative buffer strips and berms to reduce runoff. Efforts are underway by growers, working with the local Soil Conservation Service, to adopt best management practices for reducing water pollution.

## Pesticides—A Mushrooming Problem

Pesticide manufacturers across the U.S. are withdrawing registrations for mushroom use because mushrooms do not generate sufficient revenue to justify costs of reregistration mandated by changes in the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in 1988. These changes accelerated reregistration deadlines for older pesticides—those registered prior to November 1, 1984.

With the loss of pesticides because of economic rather than environmental factors, mushroom growers, along with most other fruit and vegetable producers, find themselves in the "minor use"

The U.S. Leads In Global Commercial Mushroom Production





## Commodity Spotlight

### Mushroom Crop Sprouts With Consumer Demand

While mushroom production has grown steadily during the past decade, a major shift has occurred between the shares destined for fresh and for processed consumption.

Fresh mushroom use was traditionally small, because of perishability. Until the early 1980's, most of the mushrooms consumed by Americans were canned. Annual canned consumption was 1.8 pounds per capita in 1980, compared with only 1.2 pounds of fresh mushrooms.

The turnaround came during the 1980's, when the use of processing mushrooms rose only about 2 percent annually, while growth in fresh mushroom consumption, aided by one-touch packaging which improved fresh mushroom life, increased at an average annual rate of 5 percent. In 1991/92, the fresh market is expected to account for about 70 percent of the estimated 778 million pounds of mushrooms produced. This is up from 1990/91, when 68 percent of the total crop of 749 million pounds was produced for the fresh market.

Increases in mushroom production have resulted principally from higher yields. Agaricus, or button mushrooms are grown indoors on beds or trays. Aside from increasing the square footage planted, growers can raise output by increasing the number of pickings or by shortening the production cycle.

Shortening the production cycle in effect increases the square footage. Using better compost and adopting higher yielding mushroom varieties have been the keys to increased production. Three pickings—at about 1-week intervals—are now harvested in one cycle, instead of five pickings. Yields tend to fall off dramatically after the third picking.

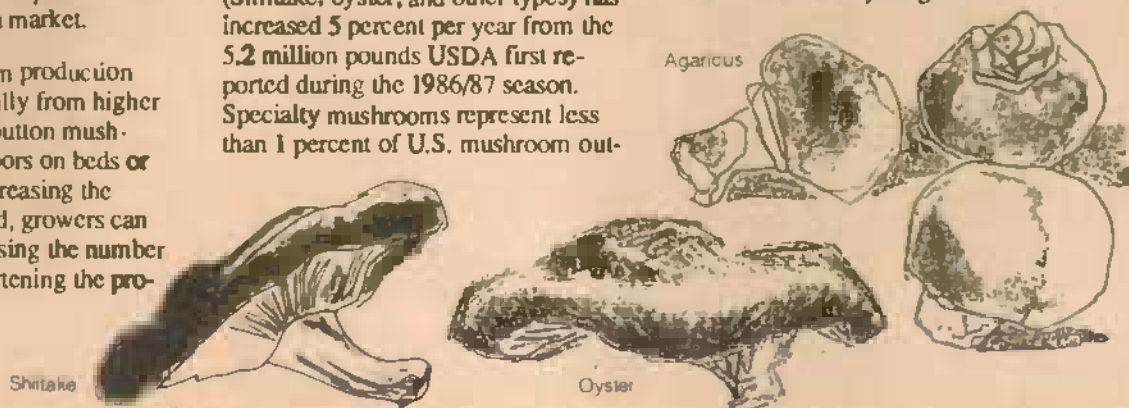
It is likely that most of the gains during the 1980's resulted from a combination of improved production practices. But output can also be increased in the short run simply by adding another bed or tray level to the production area, depending on the production system. In general, growers using systems of trays, which are moved around at various stages in the cycle, incur minimal cost increases in raising the square footage because the system is highly mechanized. Bed systems, on the other hand, are generally older and more labor intensive.

Production of specialty mushrooms (Shiitake, oyster, and other types) has increased 5 percent per year from the 5.2 million pounds USDA first reported during the 1986/87 season. Specialty mushrooms represent less than 1 percent of U.S. mushroom out-

put. However, the value share of specialty mushrooms represented 3.4 percent of 1990/91 sales, and the per-pound value of specialty mushrooms is 4 to 5 times that of the traditional button mushroom.

The most important specialty mushroom for which data are collected by USDA, is Shiitake. Shiitakes account for about 64 percent of total specialty output on average. USDA counted 228 commercial growers in 1990/91, while Shiitake industry experts estimate the number of growers to be as high as 1,500.

One explanation for the discrepancy in numbers is the unique production practices, which allow small growers to enter the industry with little initial capital. Shiitake mushrooms can be grown commercially outdoors on oak logs or indoors on sawdust. Thus, startup costs are smaller. USDA surveys the specialty mushroom farms of 200 logs or larger in 25 states, but it is difficult to cover the small hobby farms and backyard growers.



dilemma. But there's an added twist for mushroom growers—mushrooms are not green plants. They are a fungus grown in a controlled environment. The right breeding climate for successful mushroom production is also often the right breeding climate for unwanted fungi and other pests.

The most problematic fungus is *Verticillium*, also called dry bubble or the dreaded bubble disease. In addition,

Sciarid flies are a major pest. Growers combat these pest problems using both chemical and nonchemical techniques.

Across the U.S., mushroom growers tended to use the same chemicals to eradicate pest problems. Zineb was the most popular and effective fungicide used by growers, prior to suspension of all food uses when the registrant failed to provide data required to support continued use. Since the 1988 FIFRA amendments,

some other key chemicals also have been lost. Benomyl and thiabendazole are the only fungicides registered for use on mushrooms. Chlorothalonil is used in some states under emergency exemption provisions of Section 18 of FIFRA.

Chemical use varies by state, and growers are affected differently by changes in available chemicals. For example, a decade ago, Pennsylvania mushroom growers routinely used approximately two



dozen different chemicals in mushroom production. Currently growers have only two registered fungicides—thiabendazole and benomyl, which are less effective and more expensive because of reregistration. Insects are controlled with growth regulators methoprene and diflubenzuron. Propoxur, a key fly control chemical, is used on the premises as a component of the sanitation practices.

Under California law, suspension action has begun on some 57 active ingredients contained in more than 3,000 pesticide products used in farm operations. Two suspensions will affect the mushroom industry—chlorothalonil and propoxur. If chlorothalonil is withdrawn, California growers will have only the two, less effective fungicides.

### Nonchemical Techniques —A Good Neighbor Policy

Integrated pest management (IPM) for mushrooms includes nonchemical methods such as sanitation practices, educating pickers to avoid the spread of disease, and pest monitoring. Programs are designed to prevent pest infestations and to avert potential crop threats. For example:

- The key sanitation practice is steam pasteurization, applied to the growing areas at the end of the crop.
- Workers are instructed to wear clean clothes and to pick in the order of the newest to the oldest crop to minimize damage from spreading pests.
- The compost that grows the mushrooms is pasteurized to rid it of unwanted pests at the end of the cycle.
- Black light fly monitoring is used to provide a fly count (index) that indicates whether or not to apply fly controls.

The success of nonchemical IPM techniques may depend on a "neighborhood" effort. In Pennsylvania, for example, mushroom operations are geographically concentrated. Unless neighboring operations practice IPM diligently, pests can

simply move from farm to farm, diluting the success of any farmer's efforts.

But California mushroom operations are more widely dispersed over a larger area, and do not have to rely on the skills of neighboring mushroom farmers. Because of the location of some farms and the distance between farms, intense outbreaks of pest populations are infrequent. To the extent that nonchemical costs are higher in geographically concentrated producing areas, California growers avoid part of these costs. This will help offset the relatively higher cost arising from having one less pesticide available to growers in California than in Pennsylvania.

### Tackling Reregistration

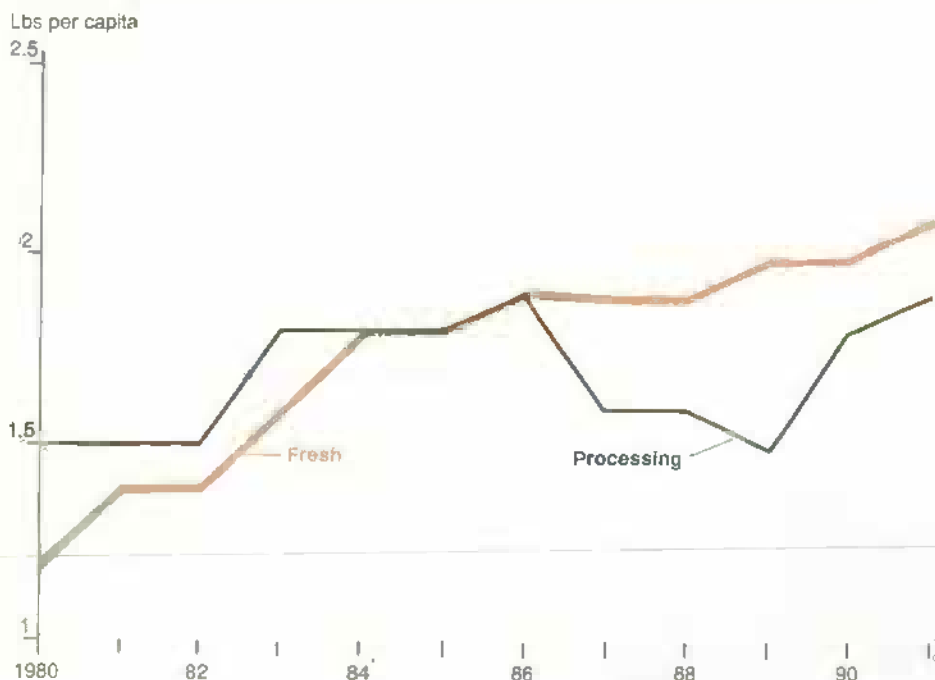
The minor use dilemma is being addressed by both USDA and the Environmental Protection Agency (EPA). The recently formed Minor Use Work Group is attempting to improve methods of communicating pesticide cancellations to growers, and studying alternatives to reduce the impact of reregistration requirements. USDA has increased funding for the Interregional Project number 4 (IR-4), to assist with residue data develop-

ment in support of new registration, documenting tolerances, and reregistering minor use pesticides.

EPA's data requirements can be daunting. Up to 70 different types of tests can be required, investigating the chemistry, toxicology, environmental fate, and ecological effects of a pesticide before registration of a new chemical. EPA can choose to waive some testing and data requirements for minor use crops. In six mushroom producing states—California, Colorado, Delaware, Pennsylvania, Tennessee, and Texas—Section 18 emergency exemption has been granted for use of chlorothalonil. However, even this procedure has come under recent criticism as a means of circumventing reregistration.

Mushroom growers, through the American Mushroom Institute, have formed an IPM committee to survey growers on chemical use and to prioritize registration and research efforts. The committee is working closely with EPA to determine information requirements to enable registration of pesticides for new uses, or reregister older pesticides. With the loss of zineb—the most widely used fungicide—growers are trying to register chlorothalonil, a viable alternative.

U.S. Fresh Mushroom Consumption Nearly Doubled in a Decade




## Commodity Spotlight

## World Agriculture &amp; Trade

Chlorothalonil is presently registered for use on many other greenhouse and vegetable crops. IR-4 first applied for a tolerance for residues of chlorothalonil on mushrooms in 1982 in cooperation with the mushroom industry, but EPA requested more data. Additional residue field trials were requested and completed, and the report was sent to EPA in March 1992. To date, however, the industry has not been granted registration, and states that are permitted to use chlorothalonil through the annually renewed Section 18 exemption are awaiting a favorable EPA ruling.

A leading California firm has led the industry in developing alternatives to existing chemical pesticides. It has patented two chemical alternatives and submitted them to EPA for registration. One is a bacteriophage to be used on bacterial diseases and the other is a product—derived from cinnamon—to control *Verticillium*. Both applications are still under review at EPA.

With environmental concerns mounting, however, mushroom producers are using fewer chemicals and adopting best management practices for composting. In the course of adopting changes—or facing new regulations—they have forged alliances with other industry groups and government. Producers hope these relationships will continue to provide information to the mushroom industry as environmental consciousness changes the way growers do business in the U.S. [Shannon Reid Hamm (202) 219-0886] 

In the July

## Agricultural Outlook . . .

### Sustainable agriculture

— a follow-up on last month's overview

Read about:

- \* Techniques at work
- \* Policies in the wings



Courtesy Port of New Orleans

## New Era in Trade with Former USSR

**W**ith the transformation of the Soviet Union, trade between the U.S. and the former USSR has undergone significant change. The Soviet Union was at one time or another the largest buyer of U.S. wheat, second-largest buyer of U.S. feed grains, and fourth-largest U.S. agricultural market overall.

The collapse of communism brought about the collapse of one of the largest cash markets for U.S. agricultural exports. Throughout the late 1970's and early 1980's, the Soviets purchased U.S. commodities without the aid of U.S. government programs used to assist exports to other markets.

But the composition of U.S. agricultural exports to the region has changed, both in the mix of commodities sold and in the terms of trade—from sales for cash to sales made possible by Commodity Credit Corporation (CCC) programs. The U.S. is now supporting agricultural exports through existing CCC commercial programs, principally the Export Enhancement Program (EEP) and the

Export Credit Guarantee Program (known as GSM-102).

## EEP Moves U.S. Grain To Republics

Under the EEP, the CCC provides bonuses for specified U.S. commodities to targeted countries to enable U.S. exporters to match prices from subsidized competitors such as the European Community (EC). Exports of wheat to the Soviet Union under the EEP started in fiscal 1987. Since then, the Soviet Union and successor republics have used the EEP to make all their U.S. wheat purchases. In some years, EEP exports have accounted for a significant portion of their agricultural imports from the U.S. The former Soviet Union also purchased a relatively small amount of flour under the EEP during fiscal 1991.

Since October 1991, the U.S. has also targeted exports of barley, rice, and vegetable oil to the former Soviet Union. While the former USSR has rapidly purchased U.S. wheat and barley under the EEP, purchases of U.S. flour, rice, and vegetable oil have been slower. However, in some cases purchases of those commodities have been significant.

Since fiscal 1987, more than \$1 billion in bonuses has been provided to enable sales to the former Soviet Union under EEP. Almost half were provided in the last 18 months, much of it since October 1991. From the start of fiscal 1992 through May 5, EEP bonuses for sales to the former Soviet Union were already more than twice the total bonuses provided for all of fiscal 1991.

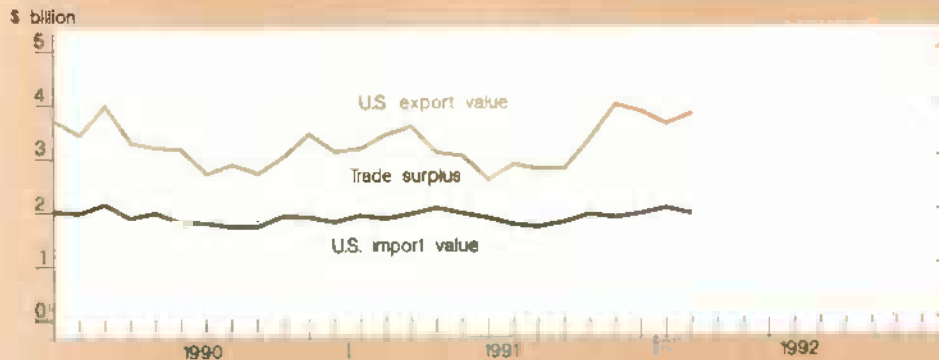
## Maintaining Trade With Credits

An export program made available more recently for U.S. trade with the former Soviet Union is the provision of GSM-102 credit guarantees. Under the program, the CCC normally guarantees repayment of 98 percent of the principal and a set amount of interest on private

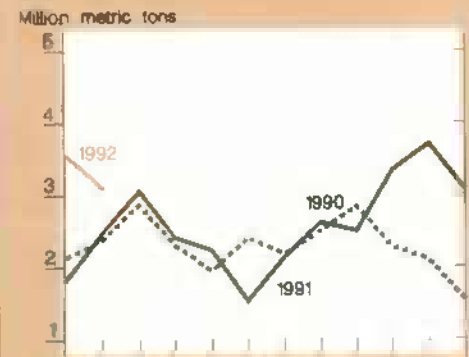
## U.S. Trade Indicators

## World Agriculture &amp; Trade

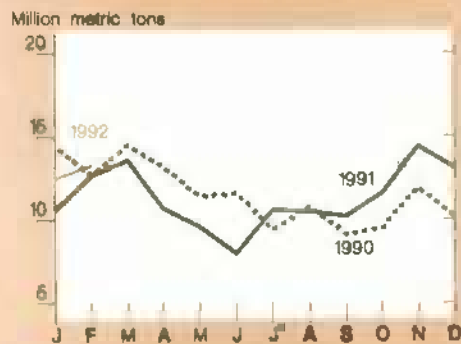
U.S. agricultural trade balance



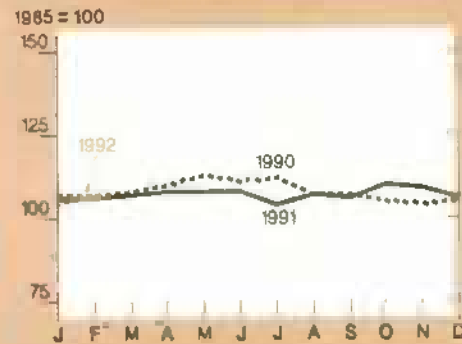
U.S. wheat exports



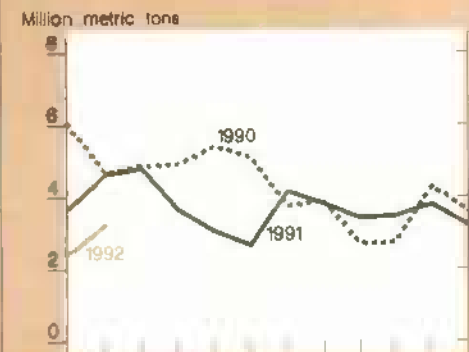
Export volume



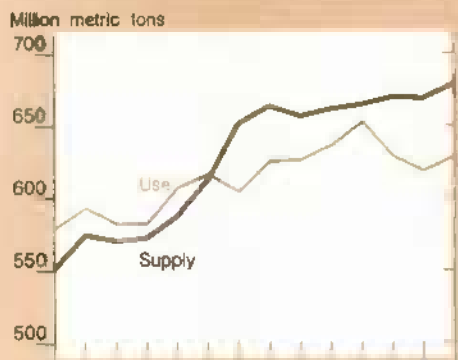
Index of export prices



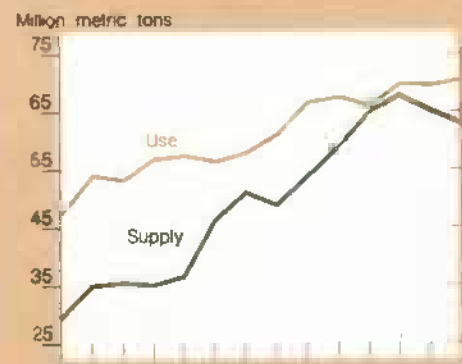
U.S. corn exports



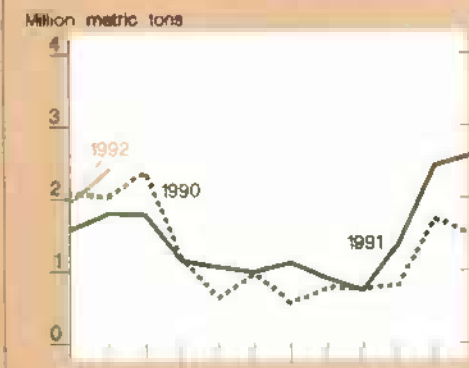
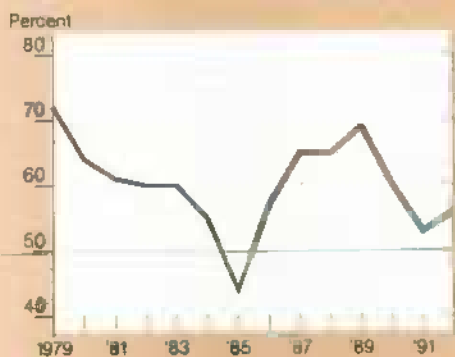
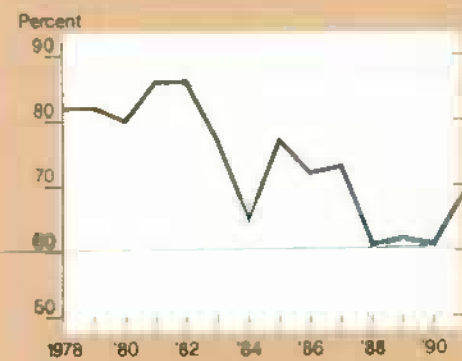
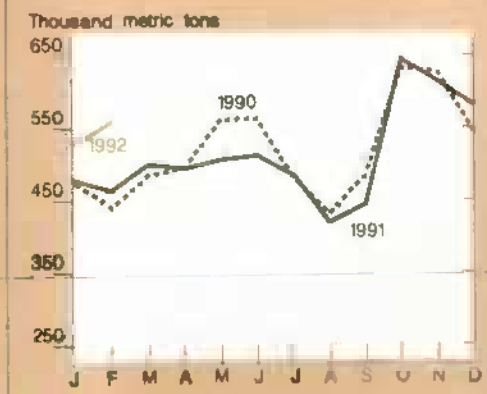
Foreign supply &amp; use of coarse grains



Foreign supply &amp; use of soybeans



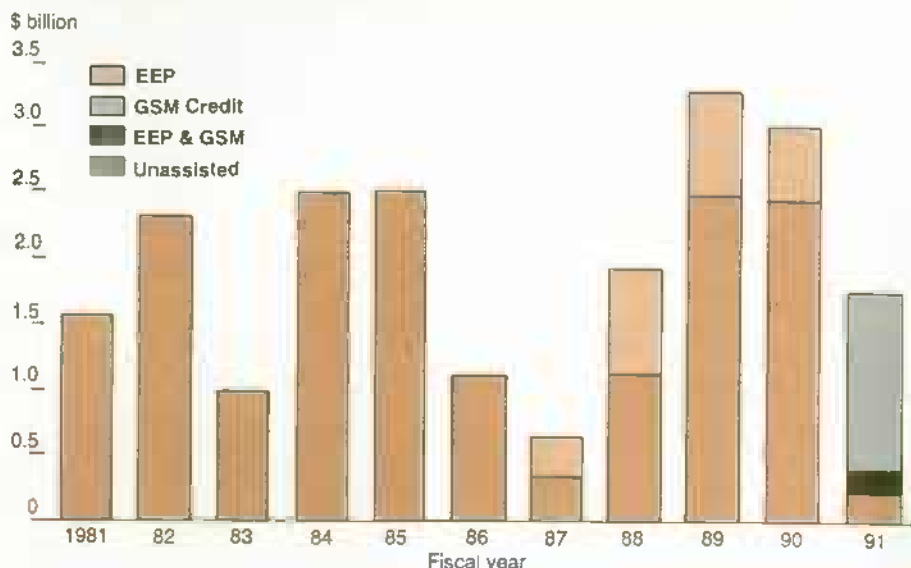
U.S. soybean exports

U.S. share of world coarse grains exports<sup>1,2</sup>U.S. share of world soybean exports<sup>1,2</sup>U.S. fruit, nut & vegetable exports<sup>3</sup><sup>1</sup>Excluding intra-EC trade <sup>2</sup>October-September years <sup>3</sup>includes fruit juices



## World Agriculture & Trade

### U.S. Farm Exports to Former USSR Now Depend on Export Assistance



See text for discussion of 1992 numbers.

Source: USDA.

credit extended to certain countries to purchase specified U.S. agricultural commodities. U.S. taxpayers incur no cost under the program as long as repayments are made as scheduled. Exports to the Soviet Union were made eligible for this program in January 1991. As of May 8, 1992, the CCC had received no claims from banks for failure to pay.

After the collapse of the central Soviet government following the August 1991 coup attempt, the CCC guaranteed 100 percent of the principal and a variable amount of interest rate coverage, to encourage banks to participate in the program and promote U.S. agricultural exports to the former Soviet Union. With the availability of GSM-102 guarantees, the bulk of U.S. exports to the region has been made under the program. A significant share of GSM-102 exports also benefits from bonus assistance under the EEP. The former Soviet Union is now the largest market under the GSM-102 program.

For U.S. exporters to register sales under the program, an allocation of credit guarantees is announced for export of a specific commodity to a specific country. For some markets, the credit guarantees

become available in several set amounts, or tranches, during the fiscal year. Sales then follow—sometimes gradually—but in the case of the former Soviet Union, sales have been made and credit guarantees registered almost as quickly as allocations are made operational, especially in fiscal year 1992.

The CCC made \$1.9 billion in credit guarantees available in fiscal 1991 for exports to the former Soviet Union, and another \$1.8 billion in fiscal 1992. As of May 19, almost all of the \$1.8 billion credit guarantees had been used, chiefly for purchases of wheat, feed grains, and protein meals. Other commodities, in order of magnitude of purchases, included flour, soybeans, vegetable oils, poultry meat, rice, hops, and almonds. Credit guarantees for freight coverage were also included.

On April 1, President Bush announced an additional \$600 million in GSM-102 credit guarantees for U.S. exports to Russia, and \$500 million to other republics, provided the requirements of the credit guarantee program are met.

On May 6, President Bush announced that of the \$500 million for other former Soviet republics, \$110 million would be allocated for sales to the Ukraine. On

May 12, USDA Secretary Madigan announced that \$55 million would be made operational immediately and the remaining half available after June 30. Of the first \$55 million, \$34.9 million is for purchases of U.S. wheat, \$13.5 million for feed grains, and the remaining \$6.6 million for freight on those sales. The amount of coverage will be the same as under the allocation to the former Soviet Union—100 percent of the principal and a variable amount of the interest rate. The remaining \$55 million will be allocated for wheat (\$25.1 million), feed grains (\$20.2 million), and rice (\$3 million). An additional \$6.6 million will be allocated for freight.

On May 20, Secretary Madigan announced that \$300 million in credit guarantees will be made operational for sales of agricultural commodities to Russia, the first of three tranches of the \$600 million allocated. Of the \$300 million, \$112 million is for wheat, \$78.5 million for feed grains, \$26 million for protein meals, and \$45 million for other commodities, including tallow, vegetable oil, and an unallocated portion. These credit lines may be increased by not more than \$38.5 million to provide coverage for freight on a c&f or c.i.f. basis. If the past is any indication, these credit guarantee allocations will be used quickly.

The pace of purchases under the GSM-102 program contrasts with the experience of credit programs of the EC. In December 1990, the EC announced a 500-million-ECU credit guarantee program (about \$365 million). A year later, in December 1991, the EC announced another 1.25 billion ECU (approximately \$960 million) in credit guarantees for EC agricultural exports. Under a separate initiative of French COFACE credit guarantees, 1.2 billion francs (nearly \$240 million) was provided in February 1991, and another 2 billion (about \$360 million) in November 1991.

The August 1991 Soviet coup attempt and operational difficulties have slowed sales under the European programs, and EC governments have been reluctant to



## World Agriculture & Trade

assume greater risk on the credit involved. Given the Soviet need for credit, the failure of the EC and member nations to promptly implement credit programs will likely result in delayed, if not lost, sales to the region.

### Food Aid Targeted To Needy

In addition to commercial export assistance, the U.S. and other nations are providing food aid for humanitarian assistance to the former Soviet Union. The Section 416(b) program, authorized by the Agricultural Act of 1949, provides for overseas donations of surplus CCC commodities. In fiscal 1992, butter, buttermilk, nonfat dry milk, corn, and sorghum are eligible to be donated under the Section 416(b) program. Under the Food for Progress Program, Section 416(b) commodities or P.L. 480 Title I funds are used to provide commodities to assist the recipient country. Food aid programs have provided much less assistance than the major commercial programs. As of May 19, USDA signed agreements for food aid worth \$154 million in commodity, freight, and administrative costs to some of the republics.

Unlike the food aid provided to East European countries, aid to the former Soviet Union is being targeted to specific needy groups, mostly outside domestic marketing channels. Most food aid to East European countries provides balance-of-payments support and is not targeted to specific groups.

### Assistance Is Key To Current Trade

What effect is export assistance having on U.S. trade with the former Soviet Union? Some commodities now sold under the credit programs, such as corn, protein meal, and soybeans, were traded previously, without U.S. government assistance. These commodities now require

government assistance to maintain exports, given economic conditions in the former Soviet Union.

However, over the last 5 years, the Soviets purchased no U.S. rice or vegetable oil until those commodities were included under the EEP and the GSM-102 program. So the assistance programs have expanded the market for those commodities.

In the wheat market of the former Soviet republics, the U.S. has made significant gains. The combination of EEP and GSM-102 helped U.S. exporters capture about one-third of that market in trade year 1991/92. This is the largest U.S. market share in the region since 1987/88 and up considerably from the 14-percent share in 1990/91.

The EC has not improved its market share with the former Soviet republics, even though it has large exportable supplies. But the EC has had no experience with a Community-wide credit guarantee program, and individual governments have been unwilling to assume risk comparable to that of the U.S. The result has been sluggish EC sales in 1991/92 and a lower market share in former Soviet republics. With its broader array of export programs, the U.S. has been able to gain markets in the former Soviet Union.

New market opportunities are likely to develop, such as the rice and vegetable oil sales in fiscal 1992, but until the former Soviets are able to reform their economies, U.S. agricultural exports to the region are likely to continue to need export program assistance to facilitate sales. [Mark E. Smith (202) 219-0820] **AO**

## Environment & Resources



Courtesy Royal Netherlands Embassy

### EC Spells Out Environmental Concerns

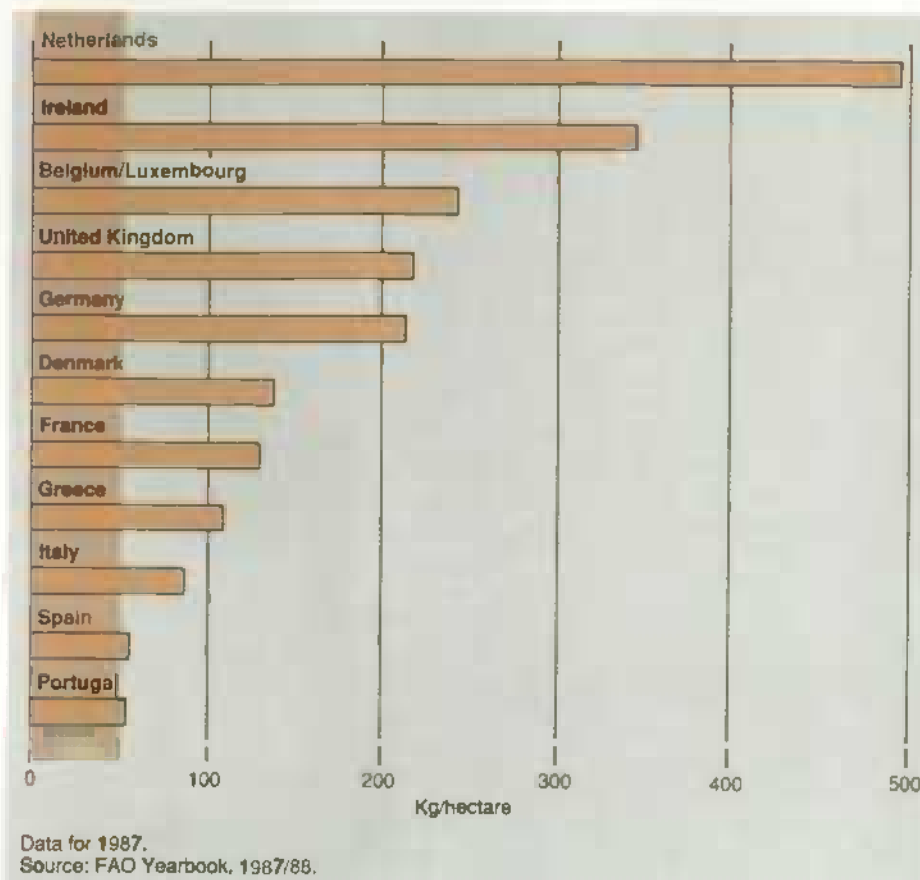
**E**nvironmental fallout from industry, agriculture, and transport has become a major concern of the European Community (EC). In agriculture, attention has especially focused on the presence of nitrates in soil and water.

Nitrate levels are usually highest in regions with light and permeable soils, in soils with low humus content, or where crop and animal production is intensive. In several EC member states, inorganic fertilizers and animal waste from agricultural operations have resulted in nitrate levels that are above acceptable ranges in some areas.

Nitrates can enter surface or groundwater in three ways. They can leach into groundwater through the soil, run off into surface waters, or they can be converted into gases that return to the earth as acid rain. As much as 10 to 20 years can elapse between the time nitrate is washed from the topsoil and when it appears in groundwater.

## Environment & Resources

### North European EC Members Are the Heaviest Users of Nitrogen Fertilizers



High levels of nitrogen in surface water encourage eutrophication—a process of excessive plant and algae growth. Eutrophication starves plants and fish of oxygen, and the resulting decaying vegetation and fish contaminate drinking water supplies. The phenomenon is most common in shallow coastal waters and in still, freshwater bodies like lakes and reservoirs.

Intensive agriculture—both crop and livestock—is at the root of the EC's farm-related water quality problems. Livestock numbers have increased since the 1960's, and the industry has shifted toward production methods involving more intensive confinement. In the Netherlands, for example, an average pig operation had 73 pigs in 1967, but by 1987 the average operation had 406 pigs. Intensification has occurred in almost all densely populated areas of the Community, and resulted in excess animal waste that must be spread on fields of other

nearby farms, transported elsewhere, or processed in some way.

In some areas, livestock waste is being disposed of at rates which produce nitrogen concentrations 3 to 4 times acceptable levels. Animal wastes from intensive livestock units have become a source of water contamination, particularly in locations with no convenient method to dispose of surplus manure.

Extensive use of fertilizers in crop production has also contributed to the nitrate/water quality problem. Nitrogen used on cropland and pasture has increased more than 400 percent in the EC in the past four decades. The highest use of nitrogenous fertilizer is in the northern member states, especially the Netherlands, Ireland, the United Kingdom (UK), Belgium, and Luxembourg.

### Setting Nitrate Standards...

Concerns about the quality of drinking water supplies led the EC to initiate policies to combat nitrate pollution in ground- and surface water. These measures will influence EC agricultural practices in the future.

The EC Commission has adopted a maximum nitrate level of 50 mg per liter of ground- or surface water. In June 1991, the Nitrate Pollution Prevention Directive (Nitrate Directive) was adopted by the EC Council of Environment Ministers. Its goals are to restrict the quantities of nitrate that can accumulate and jeopardize drinking water sources, and to prevent the buildup of nitrates and discourage eutrophication in lakes, estuaries, and other water sources.

Under the directive, EC member states must designate vulnerable zones—areas that drain directly or indirectly into surface freshwater or groundwater—where nitrate levels exceed 50 mg per liter, and areas that drain directly into natural lakes, estuaries, or coastal waters likely to become eutrophic without preventive action. In general, areas of intensive agricultural and industrial activity are likely to be designated vulnerable zones. A member state may be exempted from the designation system for vulnerable zones if it establishes an overall national action program to deal with the nitrate problem.

Within 2 years of identifying vulnerable zones, member states must introduce action programs to reduce or limit the amount of nitrogen flowing into water courses. All action programs will include controls on manure and slurry spreading, and on the amount of chemical fertilizers used. The directive sets manure and slurry limits beginning in 1995, with reductions in the limits over the following 4 years. Member states will also set maximum application levels for inorganic fertilizers.

## EC Members Clean Up the Farms

Most current environmental strategies aim primarily at reducing the quantity of nitrates applied, by limiting intensification in livestock production and curtailing the use of manure and inorganic fertilizers. Some member state governments, including the Netherlands, Denmark, and the United Kingdom (UK), have already mandated changes on their own in manure management and cropping practices to reduce nitrate levels.

The UK's Nitrate Sensitive Areas policy imposes a maximum limit on fertilizers in areas where nitrate levels exceed the EC's limit of 50 mg per liter. Denmark's Aquatic Environment Action Program seeks to eliminate pollution resulting from stored animal wastes and silage, and to reduce nitrogen leaching by half.

The Netherlands, because of the density of both its human and livestock populations and its proximity to the North Sea, is one of the most environmentally conscious EC members. The Netherlands has enacted bold legislation to reduce surplus manure production and to limit nitrate levels in groundwater.

In 1986, the Netherlands introduced a system of levies on excess manure

production. This tax is an example of the "polluter pays" principle, and requires farmers to dispose of all surplus manure at their own expense, by either transferring it to manure banks or transporting it to manure deficit areas.

The government of the Netherlands imposed a tax on manufactured animal feed in 1987, and required farmers to prepare manure accounts. Manure spreading is banned during the winter months from October to March, and farmers must increase their manure storage capacity. A cornerstone of the government's manure policy is building manure processing plants—the goal is to be able to process surplus manure into fertilizer pellets or other products by 1995.

The government has also introduced comprehensive programs to reduce agricultural chemical runoff. The National Environmental Policy Plan specifies that phosphates and nitrates may enter water and soil only up to the amount that can be absorbed naturally. The essential elements of the plan include a 90-percent reduction in nitrate and phosphate effluent levels and a 50-percent decline in pesticide use by the year 2000.

Action programs will follow a "Code of Good Agricultural Practice." The code limits the impact of farming on the environment by:

- establishing times within seasons when fertilizers can be applied;
- prohibiting application during flooding or freezing;
- controlling application on sloping land and headlands close to water courses;
- specifying standards for manure storage;

- specifying additional measures to minimize nutrient loss into water courses; and
- taking into consideration factors such as land use, rotations, use of cover crops, ratio of pasture to arable land, and the regulation of irrigation.

The Nitrate Directive is expected to be fully implemented by the end of this decade. It is expected to take approximately 2 years for member state governments to designate their vulnerable zones, 2 more to draw up control measures, and another 4 years to put them into effect.


## ...And Taking Steps To Meet Them

Several methods exist for reducing nitrogen concentration after water has already become polluted. These include blending high-nitrate water with low-nitrate water, and using chemicals for denitrification. In addition, some European countries are imposing tough restrictions on livestock production because of concerns about water pollution.

The Nitrate Directive attempts to strike a cautious balance between protecting and enhancing the environment and maintaining a viable agricultural industry. Livestock production accounts for more than half of the total value of agricultural output in many EC countries, and environmental legislation affects an important part of the industry. Farms in areas with large manure surpluses and high rates of fertilizer use will be most severely affected.

Livestock farms will have to find new methods to dispose of manure, and adapt to new application limits. But manure disposal poses problems for many intensive livestock operations. For livestock farmers without sufficient crop and pasture land nearby, excess manure becomes a costly byproduct. These farmers must install and operate facilities to store animal wastes when they cannot be applied to nearby fields, and in order to prevent runoff.

In regions where the nitrate content of the soil and groundwater is high for other reasons, such as soil type, farmers are seeking compensation for the costs of complying with the directive. Compliance could be expensive for affected farmers who may have to cut nitrogen application by half. Lower crop yields and limits on animal numbers will mean lost income, and meeting the terms of the directive will mean additional expenditure. At present, however, the EC has not offered compensation for lower nitrogen use or for building manure stores under the Nitrate Directive.

[Yianna L. Christopoulou and Mary Lisa Madell (202) 219-0610] 



## Rural Development



### What's Behind the Declining Farm Count?

**T**rends in entry into and exit from agriculture are important influences on the structure of U.S. farming. Farm numbers appeared to stabilize in the late 1970's after several decades of rapid decline. But the farm crisis of the mid-1980's spurred further declines in farm numbers, rekindling concerns in some quarters about an exodus from farming due to financial hardship.

While farm numbers declined by a modest 16,000 between 1978 and 1982, numbers fell more sharply between 1982 and 1987—by 151,500, or about 30,000 annually. Behind the net change in farm numbers are patterns of entry and exit that provide a clearer picture of past and current trends. What factors shaped patterns of farm entry and exit that brought about declining farm numbers in recent years? How do recent patterns compare with previous decades?

Data from the Census of Agriculture since 1920 were used to estimate the annual number of entrants, based on the

year farmers reported beginning operation of their current farms. With an estimate of the number of entrants and the net change in total farm numbers, the number of exits can be estimated.

### *Numbers More Stable Than in the Past*

Recent levels of entry and exit into agriculture are very low in comparison with historical levels, suggesting a considerable amount of flux in the farm sector early in the century. An average of about 600,000 farmers began operating farms each year during the 1920's and early 1930's. Despite the large number of farms established during this period, an equal number were going out of operation each year. So the total number of farms remained stable at about 6.5 million.

However, much of this early movement was by tenants and other small farmers, largely concentrated in the South, as they moved from one farm to another, rather than entries of new farmers. The gradual disappearance of tenant farms, coupled with changes in the definition of a farm that counted fewer small farms, left a more stable farm population.

Exit dipped sharply during the 1930's as nonfarm opportunities diminished with the Great Depression. When the country began to mobilize for World War II, exits overtook entry, and remained substantially greater for nearly 40 years. As the number of farms shrank, both entry and exit slowed, but fewer farmers entered agriculture during the 1940's and 1950's as outmigration from the sector accelerated. Entry into farming stabilized during the 1970's, and the decline in farm numbers slowed by the end of that decade.

Although declining farm numbers are often linked with an image of farmers forced to leave the sector in droves, the Census data suggest that the relatively rapid decline in farm numbers during the 1980's was actually due to the dramatic drop in entries. Annual entry slipped to about 80,000 from 1981 to 1985, with a further drop to less than 70,000 during 1986-87, the final years of the farm

recession. Exits, on the other hand, remained relatively stable.

The decline in numbers of farmers entering agriculture during the mid-1980's appeared even more dramatic coming on the heels of a rare increase in entry in 1979-80. But the recent drop in entry, while modest in comparison with historical trends, is large in relation to the stable pattern of the preceding decades: during the late 1960's and early 1970's, entry hovered at slightly over 100,000 per year, rising to 120,000 during 1979-80.

Furthermore, estimated exits stayed nearly constant at about 100,000 per year from 1979 to 1987. Bankruptcies, foreclosures, and other involuntary exits due to financial stress apparently were offset by fewer voluntary exits by older farmers during the 1980's, leaving total exits unchanged.

### *Entry More Responsive To Economic Trends*

Entry is more sensitive than exit to economic conditions. The falloff in farm numbers that began in the 1940's was triggered by declining entry rather than by increased exits. Again, during the 1980's, the principal response to poor agricultural economic and financial conditions was a drop in farmers entering the sector, with exit remaining more stable.

During the 1980's the largest declines in entry were among the youngest farmers. Entry fell 50 percent for those under 25 years of age, and 35 percent for those 25 to 34. Young people considering a farming career in these years may have been swayed by poor prospects for farm earnings to choose a nonfarm occupation or to wait for better times to enter farming.

Young people desiring to start farming may also have been deterred by reduced credit availability, as more cautious farm lenders reduced the supply of credit for farmers during the farm crisis. Much of the available credit from private and public sources was redirected to financially stressed farmers, leaving less for beginning farmers.

Declining farm birth rates and past outmigration from the farm population have also meant a dramatic decline in the number of young people raised on farms—individuals who comprise the traditional pool of potential farm entrants. Based on the number of children of various ages living on farms in 1960 and 1970, it is estimated that in the major farm states of the Midwest, the pool of potential entrants ages 25-34 shrank about 10 percent between 1982 and 1987. The pool of 18- to 24-year-olds shrank 30 percent over the same period. This helps account for the more rapid decrease in entry by the youngest people, and could mean further declines in entry during the coming decade as the pool of potential entrants shrinks even more.

### Future Farmers Of Rural America

What are the prospects for trends in entry and exit and in farm numbers? Will recent trends continue, or will entry rebound to "historical" levels?

Improved economic conditions following the end of the farm crisis in the late

1980's should contribute to an increase in the number of individuals entering farming. However, annual USDA estimates of farm numbers, based on sample surveys, show continued declines in farm numbers between 1988 and 1991, though at a slightly slower pace than in the mid-1980's. Census data covering the end of the 1980's and early 1990's will not be available until 1993. But if past trends of stable exit prevail, the slower decline in farm numbers implies that annual entry has rebounded partially, although not to levels of the early 1970's.

However, demographic trends, combined with the fact that most of the decline in entry during the 1980's was among the youngest farmers, suggest that entry may never recover to earlier levels. Census of Population data indicate a continual shrinking in the numbers of potential beginning farmers. Given improving educational and nonfarm opportunities for young people in farm communities, the future may see further decreases in entry and fewer farms, despite the strong recovery of the farm sector since the late 1980's.

### Smaller Numbers but Sound Income Prospects

Although fewer people are entering farming, returns to farm operations and owners are not declining, and in fact are comparable to returns on other investments. Hence the total amount of resources committed to farm production in the U.S., such as land, buildings, and machinery, is relatively stable. Total land in farms fell about 5 percent between 1974 and 1987, while the number of farms fell 9.8 percent. This suggests further increases in farm size, concentration in farm ownership, and changes in the way farms are typically owned and operated, as the farm sector becomes more like nonfarm businesses in structure and organization.

A comparison of farms and other types of businesses shows that farms are small and numerous in comparison with non-farm enterprises. Farms account for nearly one-fifth of all business entities in the U.S., but only 2 percent of sales. In comparison with other similarly capital-intensive industries, farms are far more likely to be organized as sole proprietorships.

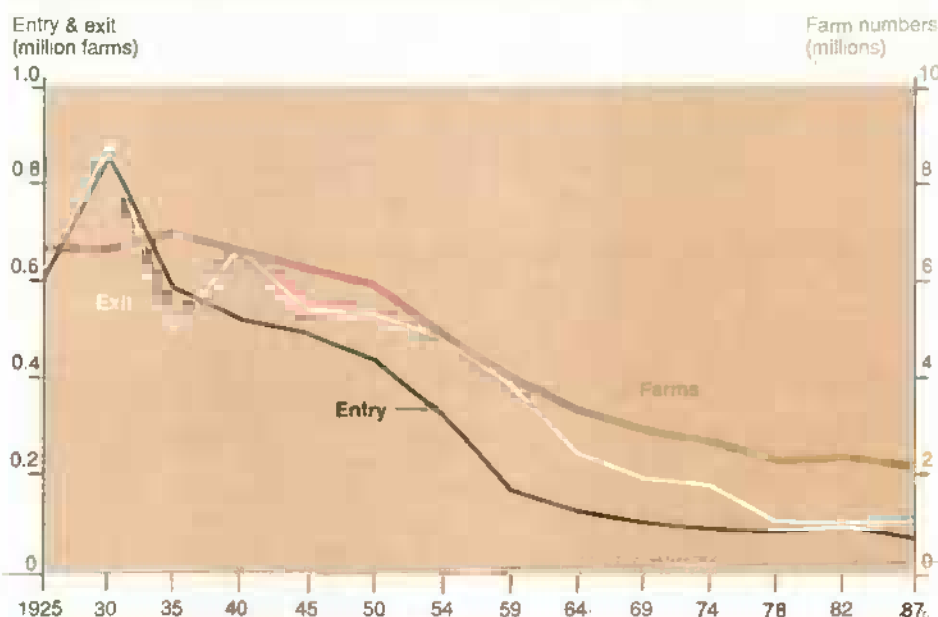
These trends raise alarm among rural residents, farm advocates, and policymakers concerned that decreasing farm numbers will result in an end to the family-owned and -operated farm and adversely affect rural communities whose economies depend on farms to purchase inputs and retail goods.

### Coming up with the Down Payment

Legislation has been proposed to help young people who want to enter farming. A number of private and state programs for beginning farmers are already in place. About 20 states have offered low-interest loans to new farmers financed by tax-exempt "aggie" bonds. Since 1980, approximately 3,500 beginning farmers have borrowed nearly \$400 million.

Private initiatives include a clearing-house to match up new farmers with current landowners, and an agricultural

Entry Into Farming Has Declined, Pulling Down Farm Numbers



Source: Census of Agriculture.

## Rural Development

credit association that subsidizes rates on loans for new farmers with higher rates for other borrowers.

Federal proposals include tax credits for land and equipment purchased by beginning farmers, subsidized operating loans, and help with down payments on land purchases. Increased financing through the Farmers Home Administration (FmHA) for beginning farmers is part of legislation recently proposed in Congress. The bill would create new loan programs for operating purposes or for down payments on the purchase of farms. FmHA could make direct or guaranteed loans up to 10 years to operators with 5 or fewer years in farming for operating purposes, and the borrower would agree to training required by USDA.

For new purchases, direct or guaranteed loans would be made to operators having 5 to 10 years of farming or ranching experience. Loans would be for 10 years, covering up to 30 percent of the purchase price, with borrowers contributing another 10 percent toward the down payment.

While these programs may help some individuals get into farming, they are unlikely to reverse present trends that are changing the face of rural America. [Fred Gale (202) 219-0522] **AO**

### Upcoming Reports from USDA's Economic Research Service

The following are June release dates for summaries of the ERS reports listed. Summaries are issued at 3 p.m. Eastern time.

#### June

- 11 Tobacco.
- 15 Asia
- 16 Sugar & Sweetener Yearbook
- 18 Agricultural Outlook
- 24 Agricultural Resources

## U.S. Economy



National Association of Home Builders

## Consumer Spending Leads Upturn

**T**he U.S. economy improved noticeably in the first quarter of 1992. Preliminary estimates indicate real gross domestic product (GDP) grew at an annual rate of more than 2 percent in the first quarter, led by the sharpest increase in consumer spending since the first quarter of 1988. Gains in employment and industrial production were less impressive, and both remain well below prerecession levels. Most forecasters expect the economy to continue improving through this year and next. However, uncertainty about consumer confidence, long-term interest rates, and overseas economies clouds the outlook. [For the latest update on the U.S. economy, see table 2. Key indicators for foreign economic growth are in table 3.]

### Production, Income Rising

In the first quarter, consumer spending led real GDP to its highest gain in 3 years. Consumer spending on durable goods rose at an annual rate of more than 18 percent in the first quarter, after falling nearly 6 percent in the fourth quarter

of 1991. Spending on nondurable goods also rose, following a decline during the previous quarter.

A rise in real personal disposable income was a major factor behind the increase in spending: real income rose at an annual rate of 3 percent in the first quarter, compared with less than 1-percent growth in fourth-quarter 1991. The growth in disposable income—the fastest in 2 years—coupled with rising consumer confidence in March and April, suggests that consumer spending will continue to climb in the next few months, reinforcing the economic upturn.

Most other spending components also contributed to GDP growth: residential building jumped almost 16 percent in the first quarter, the fourth consecutive quarterly rise. And although exports grew only 1 percent, imports fell for the first time since the first quarter of 1991, and the net export deficit fell slightly. On the other hand, spending on new plants and equipment dropped for the sixth straight quarter.

Accompanying the jump in consumer spending, increasing demand for goods and services reduced inventories significantly. Inventories fell about \$26 billion in real terms, the fourth large decline in the last six quarters, bringing inventory-to-sales ratios to relatively low levels. Future increases in demand are more likely to be met by increasing production and employment than by drawing further on inventories. Rising production and employment in turn will help raise consumer income, boosting GDP further in the coming months.

### Unemployment Still High, But Inflation Moderate

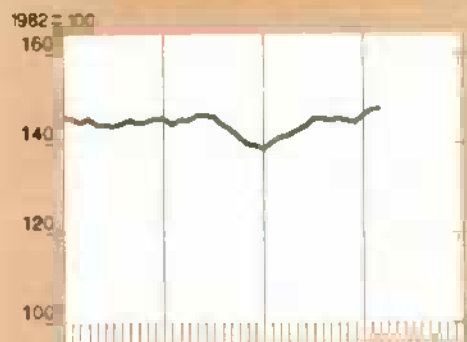
The unemployment rate, hitting the highest level since the third quarter of 1985, reached 7.2 percent in the first quarter of 1992. That is nearly 2 percentage points higher than the 5.4-percent rate of July 1990, the peak of the economic expansion. Although the number of payroll jobs rose slightly in the first quarter, the jobs picture varied across industries: private services and government added



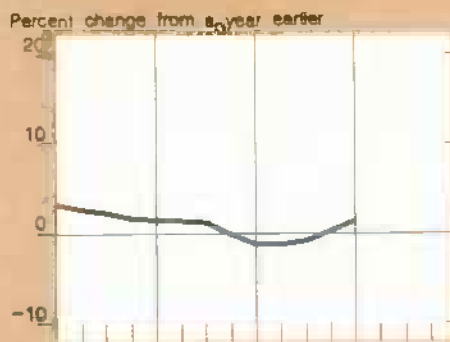
## General Economic Indicators

## U.S. Economy

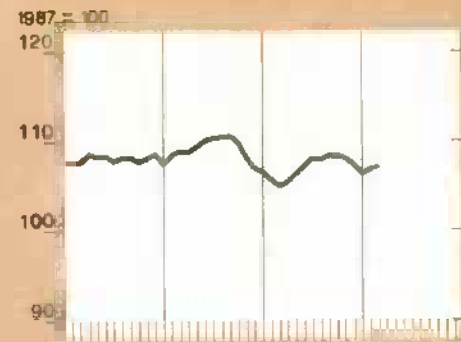
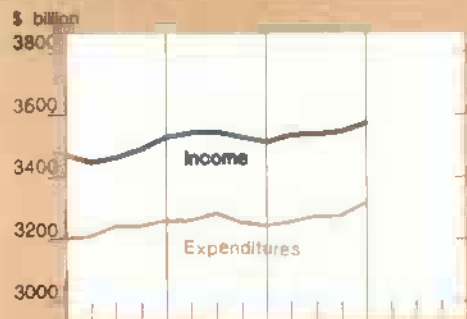
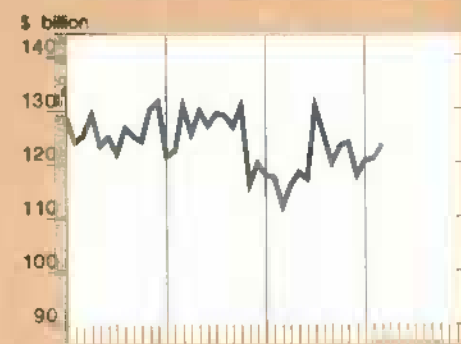
Composite leading economic indicators



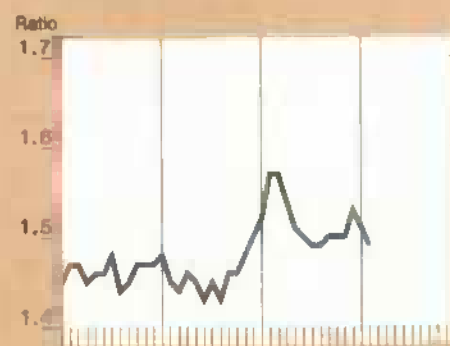
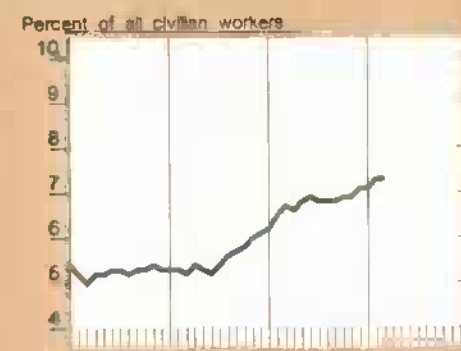
Gross domestic product (1987\$)



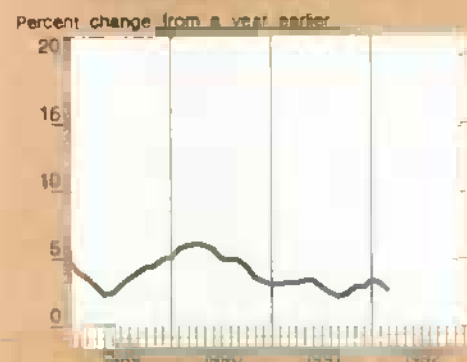
Industrial production

Disposable income and consumption expenditures<sup>1</sup>Nonresidential fixed investment<sup>1</sup>Manufacturers' durable goods orders<sup>2</sup>

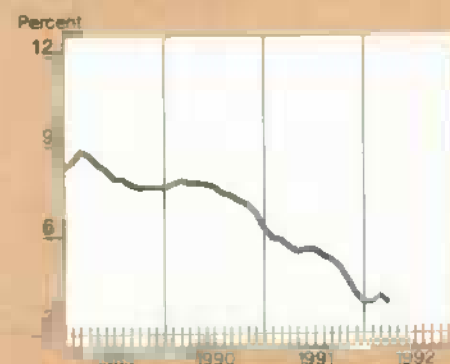
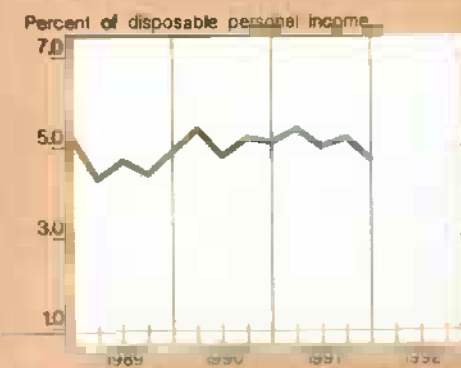
Consumer price index

Inventory/sales<sup>3</sup>Unemployment rate<sup>4</sup>

Money supply (M2)



3-month Treasury bill rate

Savings rate<sup>5</sup>

<sup>1</sup>Billions of 1987 dollars seasonally adjusted at annual rates. <sup>2</sup>Nominal dollars. <sup>3</sup>Manufacturing and trade seasonally adjusted; based on 1982 dollar.

<sup>4</sup>Seasonally adjusted. <sup>5</sup>Calculated from disposition of personal income in 1987 dollars; seasonally adjusted at annual rates.

Sources: U.S. Dept. of Commerce, U.S. Dept. of Labor, and the Board of Governors of the Federal Reserve System.

## U.S. Economy

### Why the Switch from GNP to GDP?

Economic statistics are often revised—to reflect the availability of new data, to incorporate new estimation techniques, to reflect a change in definitions, or to make different measures more comparable. In December 1991, the Bureau of Economic Analysis (BEA), an agency within the Department of Commerce, began to emphasize gross domestic product (GDP) over gross national product (GNP) as the most comprehensive measure of production in the U.S.

The difference between GNP and GDP lies in the treatment of income from foreign sources. GNP measures the value of goods and services produced by U.S. nationals, while GDP measures the value of goods and services produced in the U.S. For example, all the income received by a U.S. proprietor owning factories in the U.S. and Mexico would be counted in GNP. GDP would include income from the U.S. factory, but exclude the income received from the factory in Mexico. At the same time, the profits earned by a Japanese-owned corporation in the U.S. would be included in GDP but excluded from GNP.

Over the last 3 years, GNP has been larger than GDP since U.S. nationals received more income from abroad than foreign nationals received from the U.S. The difference has been small however, amounting to about 0.2 percent of GDP in 1991. For many countries the difference is much larger. In Germany, for example, GNP is about 8.6 percent larger than GDP.

There are two major reasons for the switch from GNP to GDP. First, because GDP measures economic activity in the U.S., it more closely parallels other measures such as employment or industrial production, which do not distinguish among the nationalities of the employer or producer. Second, GDP is emphasized by the United Nations' System of National Accounts, which many other countries use as their framework for reporting and gathering statistics. Comparing U.S. economic performance with other countries' performance is easier when the standards are the same.

jobs, but construction and manufacturing experienced minor job losses.

The combination of relatively high unemployment and low industrial capacity use is helping to keep inflationary pressures in check. During the first 4 months of the year, overall consumer prices rose at a 3.1-percent annual rate, equal to the increase for 1991.

Energy prices slipped during the first 4 months of the year, partly because crude oil prices fell about 14 percent in the first quarter. Crude oil prices are about 46 percent below their recent peak in fourth-quarter 1990. Excluding food and energy, consumer prices rose 3.6 percent at an annual rate in the first 4 months of the year. That was down from 4.4-percent growth during 1991 and about 5-percent growth in 1990. For all of 1992, consumer prices are expected to rise about 3 percent.

As the economy recovers, analysts will be watching raw materials prices for signs of accelerating inflation. Prices for raw materials are sensitive to changes in demand and foreshadow more general changes in the price levels. So far this year, prices for raw materials point to easing inflationary pressures. In April, producer prices for crude goods, excluding food and energy, were 3 percent below year-earlier levels.

### Interest Rates Are Steady

Interest rates are well below prerecession levels, with little change since the beginning of the year. Short-term interest rates fell slightly in April, when the Federal Reserve reduced the Federal funds rate—the rate banks charge each other on overnight loans—from 4 to 3.75 percent. For the first 4 months of the year,

3-month Treasury bill rates averaged 3.9 percent, down from the 4.6-percent average in the fourth quarter of 1991.

Despite fluctuations over the last 5 months, long-term interest rates remain near January's level. The yield on 30-year Treasury bonds stood at about 8 percent in early January, fell to about 7.5 percent during February, but rebounded to above 8 percent during April and early May. Relatively high long-term interest rates may reflect fears that higher inflation will accompany economic improvement. Moreover, strong demand by the Federal government to finance this year's record deficit may be keeping long-term interest rates from falling.

### Improvement at Hand But Uncertainty Lingers

Most analysts expect employment and production to rise throughout 1992, with little change in inflation or interest rates. Private forecasters put 1992's growth at around 2 percent, up from 1991's 0.7-percent decline.

Leading indicators are also pointing to improving economic conditions. After falling in the fourth quarter of 1991, the U.S. Department of Commerce index of leading economic indicators rose in the first quarter of 1992. A privately developed leading index has also pointed to strong recovery for several months.

Despite the general consensus on a continuing recovery, uncertainty persists about the recovery's strength. Some analysts are concerned that relatively high long-term interest rates will continue to constrain business investment spending. Others point out that consumer confidence has been volatile over the last year and that the current improvement may be short-lived. Another sharp decline in confidence could lead to reductions in consumer spending and derail the recovery.

Events in Japan and Germany add to the uncertainty. In Germany, monetary policy has maintained high interest rates to curb inflation, but has also slowed economic growth. European nations with currencies tied to the German mark have

## It Helps To Know... What Are Leading Indicators?

Production, sales, income, and employment statistics tell analysts how well the economy is performing. But for advance reports on how the economy is likely to perform, analysts turn to a set of statistics called leading indicators.

One example of a leading indicator is building permits, which are required before construction begins on a house or apartment building. Other statistics also serve as leading indicators. Orders for expensive consumer goods or new business equipment usually precede production and purchases of those goods. Employers tend to increase current employees' work hours before hiring new workers.

Several leading indicators are often combined to form a leading index: a single composite statistical series that can give advance warning about business cycle movements. Combining several indicators helps keep temporary developments in one part of the economy from giving a false impression about where the overall economy is headed.

Correctly interpreting movements in a leading index is difficult. Variation in lead times is a major problem, both for a single indicator and for a composite index. For example, building permits do not always lead housing starts by the same number of months.

The more the lead time varies, the more difficult prediction becomes. When several series are combined, the problem is compounded because each series has its own varying lead time.

Analysts may use average lead-time relationships, but to make a useful prediction they must then also incorporate factors specific to the given situation that may differ from the average. For example, the lead time might shorten if business invested in plant and equipment more rapidly than usual in order to take advantage of a temporary tax cut.

The best known leading index is constructed by the Bureau of Economic Analysis in the Department of Commerce, and is released in the first few days of each month. The index is composed of 11 separate leading series, including a stock price average, a measure of raw materials prices, building permits, consumer expectations, new claims for unemployment insurance, the average work week in manufacturing, the inflation-adjusted money supply, and four measures of new orders and the orders backlog.

Averaged over all postwar recessions (except the 1990-91 recession), the Commerce leading index in general showed significant decline more than 9 months before the overall economy entered a recession. However, the

lead time varied from 2 to 20 months. Moreover, there were at least three times when the leading index declined substantially but no recession followed.

The index has given less advance warning of business cycle recoveries than downturns. On average, the index has turned up between 4 and 5 months before the overall economy began to recover.

In the last 2 years, however, movements in the Commerce leading index have not provided much warning about the direction of the economy. The leading index did not begin to decline substantially until July 1990, giving no advance signal of the 1990-91 recession. However, the index was virtually unchanged from the middle of 1989 through the middle of 1990, which many analysts interpreted as a sign of an upcoming slow-growth period.

In February 1991, the index began to rise consistently, prompting predictions of recovery in the second half of the year. The index slid in the last 4 months of the year, however, at the same time the recovery faltered. More recently, the index has risen during the first 3 months of 1992, and analysts are again calling for stronger recovery in the second half of the year.

also had to keep interest rates high, slowing their growth as well. Sluggish growth in European economies could put a damper on U.S. exports, an important factor in overall U.S. economic growth.

As for Japan, private forecasters predict the slowest growth in 17 years. The Japanese economy is expected to grow slightly more than 2 percent in 1992, compared with about 4 percent last year. With Japan accounting for about 11 percent of U.S. merchandise exports, the slowdown will tend to restrain U.S. export growth.

The effects of general economic developments on agriculture are likely to be mixed. Rising consumer incomes should support domestic demand, partly offsetting any effects of reduced demand from slower growth abroad. Relatively low interest rates and inflation are likely to moderate increases in farm expenses. [R.M. Monaco and Jennifer Beattie (202) 219-0782] AO



## Special Article



## U.S.-Mexico Agricultural Trade Under a NAFTA

**C**reation of a North American Free Trade Agreement (NAFTA) among the U.S., Canada, and Mexico would combine 360 million people and \$6 trillion of economic output into a free trade area. Liberalized trade arrangements would expand U.S. agricultural exports to Mexico, with grains and oilseeds estimated to account for most of the expansion. Deciduous fruit growers in the U.S. would also benefit from stronger exports to Mexico. Under a liberalized trade regime, Mexico's horticultural products would account for more than half of Mexico's additional agricultural exports to the U.S., and Mexico would also increase its exports of some livestock and livestock products.

A NAFTA would be the first step in linking Latin America and North America in a free trade zone. This idea was promoted by President Bush in mid-1990 in the Enterprise for the Americas Initiative, intended to encourage political and economic reform in the Western Hemisphere. For Latin American nations, "trade not aid" underlies the effort to develop a complete Western Hemisphere free trade system that will benefit the economies of all trading participants.

This article concludes a five-part AO series exploring linkages between the U.S. and Mexico. The article is based on analysis provided by USDA's Economic Research Service and Foreign

Agricultural Service, and reflects information and data gathered by USDA, as well as ongoing USDA research.

### Why a NAFTA?

U.S. policy favors freer trade and open economies. In June 1990, the U.S. and Mexico announced plans to consider a free trade pact. By September, President Bush had notified Congress of intentions to begin negotiations with Mexico, and Canada also announced its desire to participate in NAFTA negotiations. Following additional discussions with Mexico and Canada, President Bush informed Congress in February 1991 of intentions to open three-country negotiations. Representatives of the three countries began meeting in June 1991 to establish procedures for negotiations, which are currently underway.

U.S.-Mexican bilateral trade has increased steadily and considerably in recent years, reaching \$59 billion in 1990. Bilateral farm trade reached a record \$5.1 billion in 1990—about \$1 billion more than in 1988. During the last decade, Mexico's economy has moved from a closed, inward-looking policy toward one that is export-oriented and open, joining the General Agreement on Tariffs and Trade (GATT) in 1986. The result has been stronger economic growth, less debt, and less debt-servicing.

Despite Mexico's overtures to open its economy and improve trade, it has retained selective and high levels of protection for many agricultural commodities. While Mexico has reduced its import licensing requirements, the government has failed to meet its GATT commitment to justify import restrictions on various agricultural products the U.S. desires to export.

Import licensing requirements continue to restrict many U.S. agricultural exports, notably corn, poultry, and grapes. Import permits are also required for wood and wood products. Although the licensing requirements affect less than 6 percent of all Mexican tariff categories, these commodities represent approximately one-third of U.S. agricultural exports to Mexico.

Sanitary and phytosanitary requirements, as well as administrative irregularities, also continue to hamper trade. Mexico's standards, testing, certification, and registration procedures for several commodities are less developed than those maintained in the U.S. and Canada.

The NAFTA represents an opportunity to provide a comprehensive agreement to eliminate, to the extent possible, the remaining trade and investment barriers among the U.S., Mexico, and Canada. All three countries are members of the General Agreement on Tariffs and Trade, which states that if separate free trade agreements are formed by certain GATT members, the agreement between them must cover substantially all trade. A NAFTA would create a trading area with 360 million people and a combined economic output of \$6 trillion.

A NAFTA would complement the successes garnered from the U.S.-Canada Free Trade Agreement (CFTA). In addition, a NAFTA would build on the progress already achieved in previous U.S.-Mexico trade talks.

The NAFTA could also promote consistency of safety standards for agricultural products traded throughout the region. A trade agreement could ensure that health- and safety-related regulations (sanitary and phytosanitary measures) are not applied to imports in an arbitrary manner or used as barriers to trade. Imported foods, of course, would still be required to meet the standards set by U.S. regulatory agencies to verify the safety of foods entering the U.S.

Other negotiating areas for a NAFTA could affect U.S. agriculture as well. The negotiations on investment could have implications for U.S. agricultural producers and agribusiness—both directly and indirectly. Growth in Mexico's nonfarm economy would increase off-farm employment opportunities, ultimately leading to higher farm wages and reducing the labor cost differential between the U.S. and Mexico.

Likewise, negotiations on intellectual property rights could be significant for U.S. biotechnology industries. And rules of origin are being negotiated to ensure that goods imported from Mexico are, in fact, Mexican and not transshipments—goods originating in other countries and shipped to Mexico for re-export to the U.S. The dispute settlement mechanism in the GATT has been used to handle problems, but complaints have arisen about timeliness, especially when movement of perishable products was involved. A more expeditious mechanism may be necessary for bilateral disputes under a NAFTA.

### ***U.S.-Mexico Trade Would Expand...***

While this article focuses on the economic consequences for agriculture under a liberalized trade environment, a free trade agreement would also have political, social, and environmental consequences—important in shaping and assessing an agreement but not considered in this analysis. The analysis in this article assumes that over a transition period of several years the agreement would completely eliminate all tariffs, quotas, and licenses that hinder or restrict agricultural trade among the U.S., Canada, and Mexico.

Most U.S. agricultural interests would have no problems adjusting to a free trade climate—indeed, most would benefit from reduced Mexican trade barriers and increased economic growth in Mexico. For certain sectors whose markets are sensitive to imports, however, temporary relief provisions—called safeguards—could be negotiated. Under the CFTA, for example, safeguards are provided for U.S. and Canadian producers of some fresh fruits and vegetables. The safeguards allow for a full preagreement duty (called a “snapback”) when certain market conditions are met. Snapbacks have been triggered only three times since the implementation of the CFTA, and only by Canada.

Complete bilateral elimination of Mexican and U.S. border protection for agricultural products over a transition period would expand the agricultural trade of both countries. Agricultural trade in both directions has been about equal between the two countries in recent years. If protection at recent levels were removed, trade would tend to shift toward a positive balance for the U.S. at the end of a transition period. U.S. agricultural exports to Mexico would expand more than Mexican exports to the U.S. because Mexico's border protection has been higher recently than that of the U.S.

The principal U.S. farm exports to Mexico are feed grains, oilseeds, meat, and dairy products. These exports likely would expand under liberalized trade. Grains and oilseeds would account for most of the expansion of U.S. agricultural exports.

Mexico's main exports to the U.S. are tropical and specialty crops such as coffee, fruits, vegetables, and feeder steers. Horticultural products would account for a large part of the expansion of Mexico's exports to the U.S. Mexican exports of certain livestock and livestock products would also see some increase.

### ***...But Output Effects Would Be Slight***

The expected production adjustments for Mexico's major agricultural products would be proportionately larger than the changes expected in U.S. agriculture. A liberalized trade environment could lead to a net expansion in U.S. agricultural production of certain commodities, such as feed grains. But the overall increase, especially in the short term, would be small because agricultural exports to Mexico represent a small proportion of U.S. production of affected commodities.

Likewise, the expansion in U.S. agricultural imports from Mexico would be small. Mexico's share of the U.S. market could increase slightly for certain horticultural crops.

Mexican exports of agricultural products are expected to expand less than its agricultural imports as a result of liberalized trade, suggesting marginal contractions in Mexico's agricultural sector. Reduction in Mexico's grain output, for example, is likely to be greater than the expansion in horticultural products.

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## Special Article

Mexican agriculture presently faces some serious constraints in land and water resources, low labor productivity, low yields due to a lack of modern technology, and a relatively inefficient transportation and marketing system. Such constraints could limit expanded output of some exportable commodities in the short run.

Freer trade with Mexico is expected to boost the growth rate of personal income in Mexico. More rapid income growth would increase Mexican demand for livestock and livestock products, as well as for food and feed grains. In response, Mexican imports of these products from the U.S. should also grow.

Further, Mexican demand for fruits and vegetables should grow even more rapidly as personal income in Mexico rises. If so, Mexico could export fewer of these products to the U.S. over the long run, given land and water constraints. This could not only limit Mexico's export potential, but could also lead to increased imports of U.S. horticultural products, particularly fresh deciduous fruits. Over a period of 10-20 years, the increase in Mexican income could have an annual positive effect on U.S. agriculture that would continue to grow and become quite substantial.

### Mexico's Corn Sector Would Change

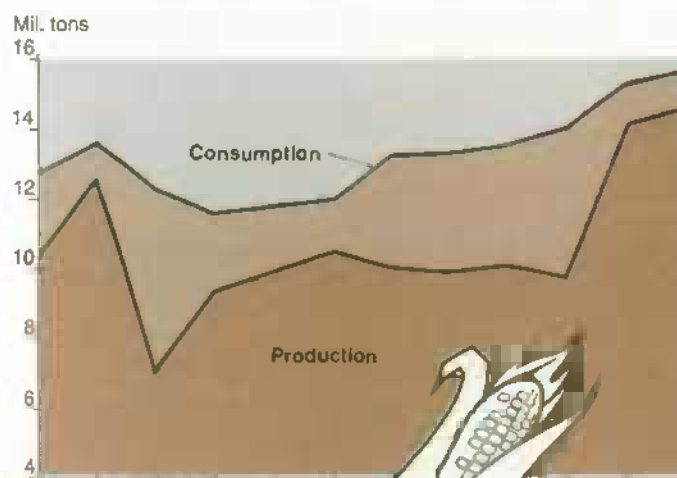
Mexican corn production would experience more change than any other sector under a liberalized trade environment. Corn, occupying over half of Mexico's total cropland, is the staple of the Mexican diet, with about 75 percent of all Mexican corn used for human consumption. About two-thirds of all corn for food is used to make tortillas, a mainstay for the poorest segments of the population. Given the importance of corn as food, the Mexican government prohibits the use of corn as feed, although in practice roughly one-fourth is used for this purpose.

Corn is produced in Mexico under very different conditions than in the U.S. About two-thirds of Mexico's corn area is communal land worked by small farmers. Unlike the yellow corn grown in the U.S., Mexican farmers typically grow white corn, the type preferred by Mexican consumers for food uses.

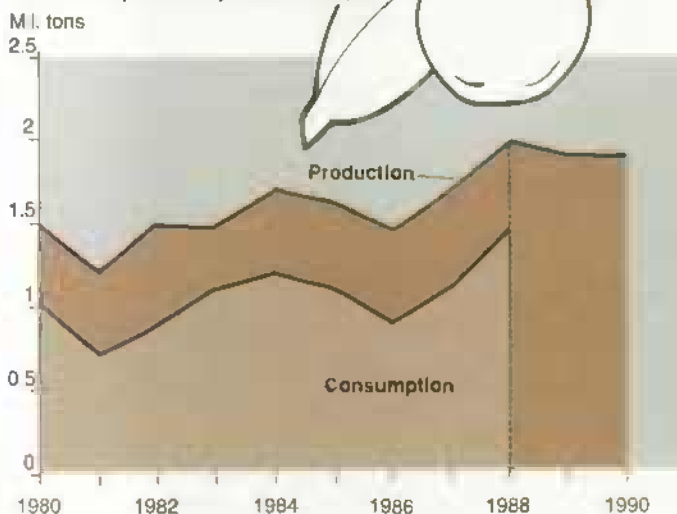
For many years, the government has provided subsidies for corn flour, tortillas, and other processed goods for consumers. Low-income families, for example, receive tortilla stamps, redeemable for 1 kg of free tortillas daily from tortilla manufacturers.

Also because of the economic and nutritional importance of corn, Mexican producers receive a guaranteed price. The government announces prices before planting to increase production incentives. In marketing year 1991, the price of white corn was set at \$5.57 a bushel, and yellow corn at \$4.64. Producers have also received input subsidies to make production more attractive, but these are being eliminated.

### Mexico Imports Corn To Meet Domestic Demand . . .



### . . . But Exports Surplus Tomatoes



Consumption data available only up to 1988.

Source: USDA.

Mexico's import license requirements, along with marketing subsidies, aid the operation of the guaranteed price program. Marketing subsidies cover the costs of moving corn from the farm to the wholesale level. The licenses restrict the amount of corn that can be imported, thus limiting domestic supplies and providing support for prices.

The conflicting objectives of paying a high price to farmers and at the same time providing cheap tortillas, has created a complex system under which different end users are charged different prices. For example, the government purchases some of the corn crop at the guaranteed price, and then resells it to millers at a lower price. Millers are expected to pass reduced costs on to consumers.



Consumer benefits from subsidies were offset during most of the 1980's by the higher taxes to support price and import licensing policies. Consumer subsidies have declined substantially as a result of austerity programs begun in 1988. The government has tried to eliminate general subsidies and concentrate on targeted subsidies to low-income consumers.

Unlike Mexico, the U.S. grows corn largely for feed—20 times as much as Mexico's production and accounting for 40 percent of the world's production. About one-fourth of Mexico's corn supply is obtained from imports, most of which are from the U.S. Imports from the U.S. are mostly No. 2 yellow corn for food use, and have averaged about 3 million metric tons or 120 million bushels annually between 1985 and 1990. The Mexican government was the primary importer of corn before 1985, but since that time, licensed imports by private corn-tortilla companies have become more important.

Transition policies, already being implemented by the Mexican government, will also have to address the potential shift of resources out of this sector as diets change and corn imports increase. Any transition provision in a trade agreement would likely strive to allow time for growth in other agricultural and nonagricultural sectors to create a use for these surplus agricultural resources.

## ***U.S. Corn Exports To Gain***

Under liberalized trade, Mexico would likely either eliminate its import licensing requirements or replace import licenses with a tariff. With no (or fewer) import restrictions, Mexico's guaranteed prices would be difficult to sustain without large fiscal outlays. As a result, Mexico likely would reduce producer price supports in order to cut budget outlays.

With lower prices, however, the quantity of corn used in Mexico would increase. Short-run increases would come from additional imports of corn for food. But as incomes increase and Mexican consumers diversify their diets, a larger proportion of shipments would come from corn used as feed. The U.S. would likely be the major beneficiary, since nearly all Mexico's corn imports come from the U.S. Exports from the Gulf ports would likely increase, as would shipments from Texas.

U.S. exports of sorghum, wheat, and soybeans would also gain in the short run under a liberalized trade environment. But since Mexico's support to these commodities is less than for corn, the country's internal prices would fall by a smaller amount. As a result, production would decline by less, and imports from the U.S. would increase to only a moderate extent. U.S. prices would increase marginally.

Over the longer run, the impacts on U.S. exports of other grains and soybeans, as well as corn, depend on the income effects in Mexico of a freer trade arrangement. With higher incomes, consumers in Mexico are likely to shift increasingly toward indirect consumption of corn and other feed grains as meats.

Since Mexican beef cattle are generally range-fed, the added demand for feed grains would come mostly from the poultry and pork sectors. Sorghum—the main feed grain in Mexico currently—should benefit, as would wheat and soybeans.

## ***Cost Advantages of Mexico's Horticultural Products***

Mexican producers of horticultural products—fruits, vegetables, and flowers—hold a significant share of trade with the U.S. In 1991, the value of U.S. horticultural imports from Mexico approached \$1.4 billion, and made up more than 40 percent of the total value of Mexico's agricultural exports destined for the U.S.

In some cases, Mexican fruit and vegetable growers enjoy cost advantages over the U.S. While costs of purchased inputs are similar to or higher than in the U.S., those associated with harvesting, irrigation, and packing are generally lower. And while Mexican production and marketing costs—on a per-acre basis—are usually below those in the U.S., on a per-ton basis the gap narrows significantly. This is because average yields in Mexico are frequently lower than those in the U.S., especially in Florida and California.

Although Mexico does not provide price or income support to fruit and vegetable producers, assistance has been provided indirectly through input subsidies to farmers. These subsidies, which were at substantial levels until 1989, were for diesel fuel and electricity (affecting irrigation pumping and cooling costs), fertilizer, and irrigation water. The substantial reduction in subsidy levels over the last 2 years has been part of Mexico's effort to reduce fiscal outlays and rely more on free market policies.

As a result, costs of production have increased dramatically. For certain fruit growers, reported fertilizer prices have increased sharply since 1989, as have prices of insecticides and fungicides, and the cost of electricity for irrigation.

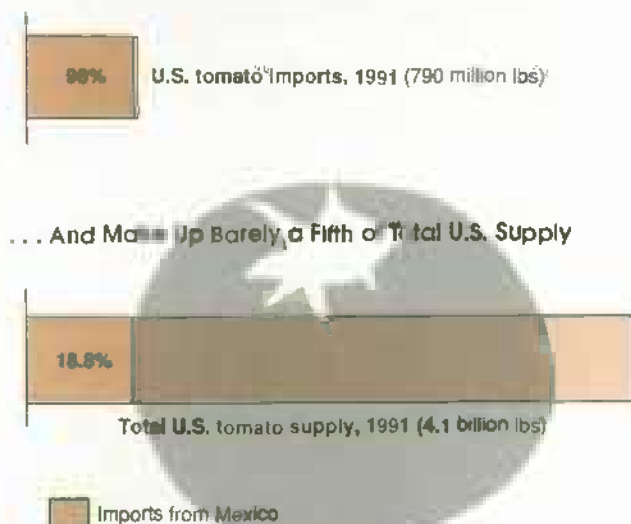
## ***Mexican Tomato Industry Is in Transition***

Tomatoes are Mexico's most important fresh vegetable export, and provide an interesting case study of potential changes in bilateral trade under a liberalized trade climate. The U.S. is the largest export market for Mexican tomatoes, which amount to 98 percent of U.S. tomato imports. Mexican tomato sales to the U.S. totaled about \$370 million in calendar 1990, dropping to about \$250 million in 1991. These imports face a tariff of 3.3 cents per kg part of the year and 4.6 cents the rest of the year. Imported tomatoes are also subject to size and grade standards regulated by the Florida tomato marketing order during October-June.

Although Mexican tomatoes enter the U.S. year-round, 75 percent arrive from December to May. During this period, Mexican tomatoes, grown in the state of Sinaloa, account for about

## Special Article

### Most U.S. Tomato Imports Come from Mexico . . .



Source: USDA.

35 percent of the U.S. market, with Florida growers supplying most of the balance. Sinaloa winter tomatoes are generally marketed in the West and Midwest, except when Florida supplies are tight. The Baja California region of Mexico also ships tomatoes between June and November—marketed almost exclusively in the Southwest and on the west coast.

Although Mexican tomato growers have an advantage in lower labor costs, other factors largely offset this advantage. For instance, labor productivity is lower, as are yields. Mexican exporters must also incur transportation and crossing costs to deliver their products to the U.S., and the Mexican peso has been revalued (upward) relative to the U.S. dollar since 1987. In other words, dollar-denominated Mexican costs are increasing (in real terms) and reducing competitiveness. Consequently, Mexico's share of the U.S. fresh tomato market has not increased over the last decade.

In addition to fresh tomatoes, Mexico also exports tomato paste to the U.S., with sales reaching \$21 million in 1990 but declining to \$18 million in 1991. The volume of Mexican tomato paste imports accounted for 40 percent of all U.S. paste imports in 1990, up from 22 percent in 1986. However, U.S. tomato paste imports from Mexico still represent less than 3 percent of the total U.S. supply of tomato paste. Tomato paste imports into the U.S. face an ad valorem tariff of 13.6 percent.

Mexico's tomato paste industry is quite modern and plant efficiency has been improving. Many of the tomatoes used for processing are grown under contract with local producers. Growers are provided with transplants, fertilizers, and pesticides. Nonetheless, contracts are difficult to enforce and growers frequently divert their tomatoes to the fresh market when prices are attractive.

The cost of producing tomato paste in Mexico and landing it in the U.S. was estimated to be 3-4 cents per pound lower than producing it in California in 1991. However, these numbers fluctuate substantially, and depend on fresh tomato prices in Mexico and the availability of tomatoes for processing. In 1990, for example, Mexico's landed border cost for tomato paste was actually 7-14 cents higher than California production costs. Higher costs were due to a Florida freeze that increased Mexican fresh market tomato prices and, in turn, the raw product acquisition cost for Mexican processors. Given the inconsistent performance of the Mexican tomato paste industry, the future of the California and U.S. tomato paste industry does not appear to be jeopardized by liberalized trade that would occur under a free trade agreement.

### What Would Free Trade Mean for Horticulture?

For horticultural products subject to relatively high U.S. tariffs, eliminating trade barriers should reduce prices paid by U.S. consumers and stimulate demand. As a result, U.S. imports from Mexico of affected fruits and vegetables should increase, and Mexican production of those commodities should rise. This assumes, of course, that tariff reductions are passed on to consumers through lower prices.

On the other hand, products for which tariffs are already small would likely see little change in trade. Since the trade-weighted average tariff rate for horticultural imports from Mexico is only 8 percent, and these tariffs would be reduced over several years, the effects of eliminating trade barriers on the sector as a whole are likely to be relatively small.

Factors other than tariff reductions are likely to have a greater impact on U.S. competitiveness. For example, 1992's recent amendments to Mexico's constitution prohibit land expropriation, legalize corporate investment in farming, and privatize the collective farming system (ejidos), permitting the sale or rental of land. These changes will buttress growth of the private sector and reinforce trade initiatives underway in Mexico, probably increasing investment in Mexican horticultural production.

Moreover, a number of American firms have already invested in the Mexican food distribution and processing sector since foreign investment regulations were changed in 1989. As a result, certain industries will likely expand regardless of the outcome of a free trade agreement.

### Long-Run Benefits for Both

Gains to the U.S. from improved incomes in Mexico would likely be higher in the long run than in the short run. As Mexican incomes rise, consumers would likely tend to consume more meats, fruits and vegetables, and processed food items.

With stronger economic growth and incomes, greater meat consumption in Mexico would likely lead to increased shipments

of certain meat products and grains. Higher consumption of fruits and vegetables, given resource constraints in Mexico, could limit Mexican exports of some commodities to the U.S., as producers concentrate on satisfying their domestic market or encourage imports from the U.S. Mexico will continue to import more seasonal fresh fruits and vegetables from the U.S. during the summer-fall off-season, when Mexican supplies are limited. However, some Mexican fruits and vegetables are grown only for the export market, and exports may increase as yields improve, independent of growth in Mexican consumer demand.

Mexico's recent unilateral reforms have resulted in a more open economy, benefiting not only Mexico's producers and consumers, but also U.S. suppliers and investors. A free trade agreement could help lock in these changes and reinforce those benefits by encouraging investment and growth in Mexico, further improving incomes and economic performance.

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# Statistical Indicators

## Summary Data

Table 1.—Key Statistical Indicators of the Food & Fiber Sector

	1991				1992				
	II	III	IV	Annual	I	II F	III F	IV F	Annual F
Prices received by farmers (1977=100)	151	147	139	146	141	139	—	—	—
Livestock & products	165	159	155	162	154	154	—	—	—
Crops	136	135	123	130	127	123	—	—	—
Prices paid by farmers, (1977=100)									
Production items	175	173	172	173	172	173	—	—	—
Commodities & services, interest, taxes, & wages	189	189	189	189	190	191	—	—	—
Cash receipts (\$ bil.) 1/	163	173	167	167	163	—	—	—	—
Livestock (\$ bil.)	84	86	87	86	84	—	—	—	—
Crops (\$ bil.)	80	87	79	81	79	—	—	—	—
Market basket (1982-84=100)									
Retail cost	139	137	137	137	138	—	—	—	—
Farm value	110	104	101	106	102	—	—	—	—
Spread	154	155	155	154	158	—	—	—	—
Farm value/retail cost (%)	28	27	26	27	26	—	—	—	—
Retail prices (1982-84=100)									
Food	137	136	137	137	138	138	—	—	—
At home	137	135	136	136	137	137	—	—	—
Away from home	137	139	141	138	140	141	—	—	—
Agricultural exports (\$ bil.) 2/	8.8	8.4	11.3	37.5	11.3	8.8	8.8	—	40.0
Agricultural imports (\$ bil.) 2/	5.5	5.3	5.8	22.6	—	—	—	—	22.0
Commercial production									
Red meat (mil. lb.)	9,636	9,986	10,316	39,402	10,086	9,875	10,450	10,435	40,846
Poultry (mil. lb.)	6,296	6,415	6,338	24,885	6,300	6,530	6,660	6,585	26,075
Eggs (mil. doz.)	1,420	1,441	1,475	5,758	1,458	1,450	1,450	1,475	5,833
Milk (bil. lb.)	38.6	36.3	38.2	148.5	37.9	38.9	36.7	36.8	150.3
Consumption, per capita *									
Red meat and poultry (lb.)	53.4	54.4	56.1	214.6	54.0	54.8	56.4	57.1	222.4
Corn beginning stocks (mil. bu.) 3/	6,940.3	4,789.0	2,992.0	1,344.5	1,521.2	6,541.1	4,558.9	—	1,120.7
Corn use (mil. bu.) 3/	2,151.6	1,797.8	1,472.2	7,760.7	2,481.1	1,986.7	—	—	7,895.0
Prices 4/									
Choice steers—Neb. Direct (\$/cwt)**	77.92	69.15	69.96	74.28	75.77	73-77	69-75	71-77	72-76
Barrows & gilts—7 mths. (\$/cwt)	53.34	50.85	39.84	48.88	38.68	41-45	39-45	36-42	39-43
Broilers—12-city (cts./lb.)	52.2	54.2	50.5	52.0	50.2	49-53	49-55	44-50	48-52
Eggs—NY gr. A large (cts./doz.)	70.2	77.1	78.8	77.5	83.8	61-85	69-75	73-79	67-71
Milk—all at plant (\$/cwt)	11.37	12.30	13.70	12.22	12.97	12.50-13.10	12.70-13.70	13.20-14.20	12.90-13.50
Wheat—KC HRW ordinary (\$/bu.)	3.00	3.11	3.82	3.18	4.50	—	—	—	—
Corn—Chicago (\$/bu.)	2.48	2.47	2.49	2.47	2.66	—	—	—	—
Soybeans—Chicago (\$/bu.)	5.73	5.65	5.66	5.69	5.75	—	—	—	—
Cotton—Avg. spot 41-34 (cts./lb.)	81.0	68.7	55.6	69.7	51.4	—	—	—	—
	1984	1985	1986	1987	1988	1989	1990	1991	1992 F
Gross cash income (\$ bil.)	156.1	157.9	152.8	165.1	171.9	179.9	186.0	182	178-186
Gross cash expenses (\$ bil.)	118.7	110.7	105.0	109.8	114.5	120.5	124.2	125	126-131
Net cash income (\$ bil.)	37.4	47.1	47.8	55.3	57.4	59.4	61.8	57	49-55
Net farm income (\$ bil.)	26.1	28.8	31.0	39.7	40.6	50.1	50.8	42	37-43
Farm real estate values 5/									
Nominal (\$ per acre)	801	713	640	599	632	661	668	681	685
Real (1982 \$)	769	657	568	518	530	533	517	506	491

1/ Quarterly data seasonally adjusted at annual rates. 2/ Annual data based on Oct.-Sept. fiscal years ending with year indicated. 3/ Sept.-Nov. first quarter; Dec.-Feb. second quarter; Mar.-May third quarter; Jun.-Aug. fourth quarter; Sept.-Aug. annual. Use includes exports & domestic disappearance. 4/ Simple averages, Jan.-Dec. 5/ 1990-92 values as of January 1. 1986-89 values as of February 1. 1984-85 values as of April 1. F = forecast, — = not available.

\* The pork carcass to retail conversion factor has been revised. \*\* Omaha Choice steer price has been replaced by the Nebraska Direct, 1,100-1,300 lb. Choice steer price.

## U.S. &amp; Foreign Economic Data

Table 2.—U.S. Gross Domestic Product &amp; Related Data

	Annual			1991				1992
	1989	1990	1991	I	II	III	IV	IP
\$ billion (quarterly data seasonally adjusted at annual rates)								
Gross domestic product	5,244.0	5,513.8	5,872.6	5,589.0	5,652.6	5,709.2	5,739.7	5,809.3
Gross national product	5,248.2	5,524.5	5,685.8	5,611.7	5,660.8	5,720.1	5,750.7	—
Personal consumption expenditures	3,517.9	3,742.6	3,889.1	3,827.7	3,868.5	3,916.4	3,943.7	4,023.5
Durable goods	459.8	465.9	445.2	440.7	440.0	452.9	447.3	468.3
Nondurable goods	1,146.9	1,217.7	1,251.9	1,246.3	1,252.9	1,257.4	1,251.1	1,270.8
Clothing & shoes	200.5	208.7	211.0	208.2	212.8	214.6	208.4	217.0
Food & beverages	563.3	595.8	619.3	616.3	620.5	620.4	620.0	629.9
Services	1,911.2	2,059.0	2,191.9	2,140.7	2,175.6	2,208.1	2,245.2	2,284.5
Gross private domestic investment	837.6	802.6	726.7	709.3	708.8	740.9	747.9	712.4
Fixed investment	801.6	802.7	745.2	748.4	745.8	744.5	742.0	745.0
Change in business inventories	36.0	0.0	-18.5	-39.2	-37.1	-3.6	6.0	-32.7
Net exports of goods & services	-82.9	-74.4	-30.7	-36.8	-17.2	-37.3	-31.4	-22.7
Government purchases of goods & services	971.4	1,042.9	1,087.5	1,088.8	1,092.5	1,089.1	1,079.5	1,096.1
1987 \$ billion (quarterly data seasonally adjusted at annual rates)								
Gross domestic product	4,836.9	4,884.9	4,848.8	4,824.0	4,840.7	4,882.7	4,868.0	4,891.9
Gross national product	4,840.7	4,894.6	4,860.2	4,843.7	4,847.8	4,872.0	4,877.3	—
Personal consumption expenditures	3,223.1	3,282.6	3,259.0	3,241.1	3,252.4	3,271.2	3,271.1	3,313.8
Durable goods	440.8	436.9	412.5	410.8	408.9	418.3	412.2	429.9
Nondurable goods	1,049.3	1,050.8	1,043.0	1,043.9	1,046.2	1,046.1	1,035.8	1,047.6
Clothing & shoes	187.9	187.4	182.9	181.7	186.1	184.7	179.0	184.7
Food & beverages	513.3	515.8	517.2	518.7	517.9	517.4	515.6	520.9
Services	1,732.9	1,773.0	1,803.4	1,796.3	1,797.2	1,808.8	1,823.1	1,836.3
Gross private domestic investment	789.2	744.5	673.7	657.0	656.3	686.5	694.9	668.1
Fixed investment	756.6	744.2	687.6	689.8	686.8	686.5	687.2	692.2
Change in business inventories	32.6	0.2	-13.9	-32.8	-30.4	0.1	7.6	-26.1
Net exports of goods & services	-75.7	-51.3	-20.9	-18.6	-12.3	-31.1	-21.3	-17.6
Government purchases of goods & services	900.4	929.1	937.1	944.5	944.3	936.1	923.3	929.8
GDP implicit price deflator (% change)	4.3	4.2	3.6	5.0	3.1	2.1	1.7	3.1
Disposable personal income (\$ bil.)	3,788.6	4,058.8	4,218.4	4,151.0	4,207.5	4,238.2	4,276.8	4,339.1
Disposable per. income (1987 \$ bil.)	3,471.2	3,538.3	3,534.9	3,514.8	3,537.4	3,539.9	3,547.5	3,573.7
Per capita disposable per. income (\$)	15,313	16,236	16,695	16,492	16,678	16,752	16,855	17,058
Per capita dis. per. income (1987 \$)	14,030	14,154	13,990	13,985	14,022	13,992	13,981	14,047
U.S. population, total, incl. military abroad (mil.) *	247.3	249.9	252.7	251.6	252.2	252.9	253.7	254.3
Civilian population (mil.) *	245.1	247.8	250.6	249.4	250.1	250.8	251.6	252.3
	Annual			1991		1992		
	1989	1990	1991	Mar	Dec	Jan	Feb	Mar
Monthly data seasonally adjusted								
Industrial production (1987=100)	108.1	109.2	107.1	105.0	107.4	106.4	106.9	107.2
Leading economic indicators (1982=100)	144.9	144.0	143.5	141.5	145.1	146.5	147.6	147.9
Civilian employment (mil. persons)	117.3	117.9	116.9	116.8	116.7	117.1	117.0	117.3
Civilian unemployment rate (%)	5.2	5.4	6.6	6.7	7.1	7.1	7.3	7.3
Personal income (\$ bil. annual rate)	4,380.2	4,679.6	4,834.4	4,781.4	4,925.6	4,914.7	4,963.2	4,990.5
Money stock-M2 (daily avg.) (\$ bil.) 1/	3,227.3	3,339.0	3,439.4	3,386.9	3,439.4	3,448.2	3,475.4	3,473.6
Three-month Treasury bill rate (%)	8.12	7.51	5.42	5.91	4.12	3.84	3.84	4.05
AAA corporate bond yield (Moody's) (%)	9.26	9.32	8.77	8.93	8.31	8.20	8.29	8.35
Housing starts (1,000) 2/	1,376	1,193	1,014	918	1,118	1,180	1,283	1,365
Auto sales at retail, total (mil.)	9.9	9.5	8.4	8.8	7.9	8.0	8.5	8.3
Business inventory/sales ratio	1.51	1.51	1.52	1.67	1.53	1.51	1.49	—
Sales of all retail stores (\$ bil.)	145.1	150.6	151.8	151.9	152.4	155.7	157.7 P	157.1
Nondurable goods stores (\$ bil.)	90.8	96.0	98.0	97.9	97.8	99.5	100.3 P	99.6
Food stores (\$ bil.)	28.8	30.2	30.9	30.9	31.1	31.2	31.0 P	31.2
Eating & drinking places (\$ bil.)	14.5	15.2	15.8	15.6	16.3	16.3	16.6 P	16.5
Apparel & accessory stores (\$ bil.)	7.6	7.9	8.0	7.9	7.8	8.1	8.3 P	8.1

1/ Annual data as of December of the year listed. 2/ Private, including farm. R = revised. P = preliminary. — = not available.

Note: \* Population estimates based on 1990 census.

Information contact: Ann Duncan (202) 219-0313.

Table 3.—Foreign Economic Growth, Inflation, &amp; Exports

	1983	1984	1985	1986	1987	1988	1989	1990	1991 E	1992 F	1993 F	Average 1981-90
Annual percent change												
World, less U.S.												
Real GDP	2.4	3.4	3.0	3.1	3.1	3.9	3.2	1.2	-0.8	1.0	3.1	2.6
GDP deflator	7.8	7.1	7.4	7.2	8.7	11.2	11.4	42.1	25.0	54.2	41.8	12.0
Real exports	2.2	8.6	2.5	3.4	5.9	7.6	7.0	4.5	-0.9	2.1	4.6	4.7
Developed less U.S.												
Real GDP	2.1	3.4	3.4	2.6	3.3	4.4	3.6	2.9	1.3	1.7	3.1	2.8
GDP deflator	6.2	4.9 <sup>a</sup>	3.9	3.9	2.7	3.1	3.8	3.6	4.3	4.4	2.2	4.8
Real exports	2.7	10.6	5.4	-0.1	4.1	7.3	9.7	7.8	3.9	2.2	4.9	5.7
Eastern Europe & C.I.S.												
Real GDP	2.7	2.0	0.7	3.5	1.2	1.7	1.0	-6.6	-14.4	-8.4	-2.0	0.9
GDP deflator 1/	3.1	3.0	4.2	5.7	8.2	22.5	25.8	190.1	73.1	127.7	71.5	27.6
Real exports	2.8	3.7	-6.8	11.6	6.3	7.4	-5.9	-10.1	-31.7	-3.6	0.4	1.0
Developing												
Real GDP	3.0	4.5	4.0	4.1	4.0	4.4	3.5	2.6	2.7	4.7	5.5	3.4
GDP deflator	38.7	37.3	36.4	25.5	33.1	26.5	19.5	17.7	11.7	12.9	12.5	29.1
Real exports	0.4	7.0	1.7	7.4	10.9	9.2	8.8	5.2	3.4	4.6	6.0	4.8
Asia												
Real GDP	8.4	7.5	6.4	7.0	7.8	9.0	5.3	5.2	5.8	6.3	6.6	6.8
GDP deflator	6.3	7.5	5.9	4.4	7.8	8.2	6.1	8.3	8.5	8.4	7.4	6.7
Real exports	6.4	11.3	2.9	18.9	15.8	14.9	8.2	6.6	7.0	8.0	6.8	9.1
Latin America												
Real GDP	-2.7	3.7	3.8	4.4	3.0	0.0	1.3	-0.5	2.6	3.2	4.0	1.1
GDP deflator 1/	30.0	41.2	58.8	59.5	124.6	31.8	37.0	32.1	18.5	18.0	17.6	46.4
Real exports	2.0	12.0	2.0	0.0	8.0	6.8	10.4	3.8	-1.5	2.1	5.2	5.2
Africa												
Real GDP	0.7	2.1	2.4	1.8	0.3	2.4	3.1	2.8	0.5	2.3	3.1	1.9
GDP deflator	16.4	12.1	12.2	8.0	25.1	17.1	19.4	15.2	17.8	13.2	10.8	14.3
Real exports	-5.3	-1.5	3.5	-1.0	0.0	2.9	5.0	8.5	2.9	1.6	2.8	-1.9
Middle East												
Real GDP	3.5	1.5	0.9	-1.2	-0.7	1.6	2.5	-0.6	-5.5	4.7	6.4	0.7
GDP deflator	-3.6	1.7	3.2	6.6	15.0	10.3	12.8	19.3	-2.4	10.3	14.3	8.1
Real exports	-19.6	-8.7	-7.1	-3.8	24.6	4.8	21.0	4.3	1.7	9.3	33.7	0.0

1/ Excludes Yugoslavia, Argentina, Brazil, &amp; Peru starting in 1989. E = estimate. F = forecast

Information contact: Alberto Jerardo, (202) 219-0717.

## Farm Prices

Table 4.—Indexes of Prices Received &amp; Paid by Farmers, U.S. Average

	Annual			1991			1992			
	1989	1990	1991 P	Apr	Nov	Dec	Jan	Feb	Mar R	Apr P
1977 = 100										
Prices received										
All farm products	148	149	148	148	139	137	138	142	143	142
All crops	134	127	130	130	124	120	123	128	131	128
Food grains	156	123	115	110	133	142	146	154	152	149
Feed grains & hay	128	123	118	124	116	117	119	123	123	121
Food grains	123	118	115	119	115	116	119	123	123	120
Cotton	98	107	108	115	101	92	85	82	82	88
Tobacco	149	152	159	167	163	161	157	157	175	145
Oil-bearing crops	102	93	90	95	83	83	84	85	84	83
Fruit, all	194	188	270	221	217	209	207	210	204	214
Fresh market 1/	205	197	285	236	229	219	217	221	214	227
Commercial vegetables	145	142	135	149	149	112	137	166	195	173
Fresh market	144	144	140	162	158	105	139	179	222	188
Potatoes & dry beans	186	189	144	164	103	103	101	99	108	136
Livestock & products	180	170	162	168	154	154	152	166	165	156
Meat animals	174	193	186	198	170	166	167	177	177	179
Dairy products	140	141	126	116	142	142	139	133	129	128
Poultry & eggs	137	131	125	122	121	127	115	111	111	111
Prices paid										
Commodities & services										
Interest, taxes, & wage rates	178	184	189	189	--	--	189	--	--	191
Production items	165	171	173	175	--	--	171	--	--	173
Feed	136	128	123	125	--	--	124	--	--	125
Feeder livestock	194	213	214	223	--	--	199	--	--	199
Seed	165	165	163	163	--	--	163	--	--	162
Fertilizer	137	131	134	136	--	--	132	--	--	132
Agricultural chemicals	139	139	151	154	--	--	154	--	--	160
Fuels & energy	180	204	203	198	--	--	192	--	--	194
Farm & motor supplies	150	154	157	157	--	--	160	--	--	160
Autos & trucks	223	231	244	247	--	--	248	--	--	281
Tractors & self-propelled machinery	193	202	211	210	--	--	218	--	--	217
Other machinery	208	216	226	227	--	--	230	--	--	234
Building & fencing	141	144	146	144	--	--	147	--	--	151
Farm services & cash rent	181	166	170	170	--	--	171	--	--	171
Int. Payable per acre on farm real estate debt	176	173	172	172	--	--	168	--	--	168
Taxes payable per acre on farm real estate	151	156	160	160	--	--	165	--	--	165
Wage rates (seasonally adjusted)	185	191	201	203	--	--	218	--	--	216
Production items, interest, taxes, & wage rates	167	172	175	176	--	--	174	--	--	176
Ratio, prices received to prices paid (%) 2/	83	81	77	78	74	72	73	76	76	74
Prices received (1910-14=100)	674	681	667	678	636	628	630	649	653	650
Prices paid, etc. (parity index) (1910-14=100)	1,221	1,265	1,299	1,303	--	--	1,303	--	--	1,315
Parity ratio (1910-14=100) (%) 2/	55	54	51	52	49	48	48	--	--	49

1/ Fresh market for noncitrus; fresh market &amp; processing for citrus. 2/ Ratio of index of prices received for all farm products to index of prices paid for commodities &amp; services, interest, taxes, &amp; wage rates. Ratio uses the most recent prices paid index. Prices paid data are quarterly &amp; will be published in January, April, July, &amp; October. R = revised. P = preliminary. -- = not available.

Information contact: Ann Duncan (202) 219-0313.



Table 5.—Prices Received by Farmers, U.S. Average

	Annual 1/			1991			1992			
	1989	1990	1991 P	Apr	Nov	Dec	Jan	Feb	Mar R	Apr P
<b>CROPS</b>										
All wheat (\$/bu.)	3.72	2.61	3.05	2.60	3.25	3.44	3.55	3.78	3.72	3.68
Rice, rough (\$/cwt)	7.35	6.70	7.70	7.43	7.78	7.92	7.77	7.91	7.72	7.57
Corn (\$/bu.)	2.36	2.28	2.40	2.42	2.29	2.33	2.40	2.47	2.49	2.43
Sorghum (\$/cwt)	3.75	3.79	4.15	4.05	3.95	3.99	4.07	4.20	4.30	4.08
All hay, baled (\$/ton)	85.40	80.60	71.00	87.30	89.10	68.40	69.00	70.60	70.10	73.00
Soybeans (\$/bu.)	5.69	5.74	5.60	5.77	5.48	5.45	5.54	5.59	5.67	5.61
Cotton, upland (cts./lb.)	66.2	68.2	58.3	69.5	62.4	55.6	51.6	49.6	49.9	52.0
Potatoes (\$/cwt)	7.36	6.08	5.05	6.83	4.13	4.14	4.05	3.92	4.33	5.72
Lettuce (\$/cwt) 2/	12.60	11.50	12.10	9.01	28.80	9.12	7.14	6.82	12.10	11.30
Tomatoes fresh (\$/cwt) 2/	33.10	27.30	32.60	49.30	30.60	15.90	40.50	76.00	80.70	51.40
Onions (\$/cwt)	11.40	10.50	11.60	18.40	9.08	10.50	10.70	12.90	21.10	28.60
Dry edible beans (\$/cwt)	28.50	18.50	15.60	19.60	15.80	15.00	15.00	14.90	15.60	15.80
Apples for fresh use (cts./lb.)	13.9	20.9	—	20.2	25.3	25.7	24.9	24.9	24.2	24.3
Pears for fresh use (\$/ton)	336.00	360.00	382.00	402.00	401.00	401.00	363.00	347.00	364.00	379.00
Oranges, all uses (\$/box) 3/	7.08	6.16	7.31	7.72	5.91	5.95	5.93	6.90	6.04	6.59
Grapefruit, all uses (\$/box) 3/	4.41	5.86	5.26	5.25	6.16	6.31	5.92	5.68	7.11	7.65
<b>LIVESTOCK</b>										
Beef cattle (\$/cwt)	69.70	74.80	72.90	78.00	67.90	67.40	68.90	72.50	72.90	73.00
Calves (\$/cwt)	91.80	96.50	100.00	109.00	90.00	87.60	88.30	92.80	94.10	94.80
Hogs (\$/cwt)	43.20	54.00	48.80	50.90	38.00	38.60	36.40	39.80	38.90	41.00
Lambs (\$/cwt)	67.30	56.00	52.60	54.80	50.20	52.00	53.50	55.20	63.40	65.10
All milk, sold to plants (\$/cwt)	13.56	13.74	12.24	11.30	13.70	13.80	13.50	12.90	12.50	12.40
Milk, manuf. grade (\$/cwt)	12.38	12.34	11.05	10.10	12.70	12.30	11.80	11.30	11.10	11.30
Broilers (cts./lb.)	36.1	32.4	31.0	30.7	29.6	29.0	30.0	29.9	29.7	29.4
Eggs (cts./doz.) 4/	70.0	70.4	66.9	66.7	64.0	71.8	58.2	54.3	54.2	54.5
Turkeys (cts./lb.)	40.0	38.4	38.5	37.6	40.0	40.9	37.4	35.3	37.0	36.8
Wool (cts./lb.) 5/	124.0	80.00	54.0	55.0	51.4	40.4	30.6	47.9	62.7	75.4

1/ Season average price by crop year for crops. Calendar year average of monthly prices for livestock. 2/ Excludes Hawaii. 3/ Equivalent on-tree returns.  
 4/ Average of all eggs sold by producers including hatching eggs & eggs sold at retail. 5/ Average local market price, excluding incentive payments.  
 P = preliminary. R = revised. — not available.

Information contact: Ann Duncan (202) 219-0313.

## Producer & Consumer Prices

Table 6.—Consumer Price Index for All Urban Consumers, U.S. Average (Not Seasonally Adjusted)

	Annual	1991						1992		
	1991	Mar	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
		1982-84=100								
Consumer Price Index, all items	136.2	135.0	136.6	137.2	137.4	137.8	137.9	138.1	138.6	139.3
Consumer Price Index, less food	136.1	134.8	136.7	137.4	137.7	138.0	138.1	138.3	138.8	139.5
<b>All food</b>	<b>136.3</b>	<b>135.8</b>	<b>136.0</b>	<b>136.0</b>	<b>135.8</b>	<b>136.2</b>	<b>136.7</b>	<b>137.2</b>	<b>137.5</b>	<b>138.1</b>
Food away from home	137.9	136.5	138.7	138.9	139.1	139.3	139.6	139.7	139.9	140.1
Food at home	135.8	138.0	134.9	134.9	134.4	135.0	135.5	136.4	136.6	137.5
Meats 1/	132.5	133.1	132.9	131.9	131.3	131.5	130.8	130.0	130.3	131.1
Beef & veal	132.4	132.9	132.3	131.0	130.7	131.9	131.7	131.2	131.8	133.4
Pork	134.1	135.2	135.7	134.1	132.7	131.3	128.5	127.8	127.2	127.0
Poultry	131.5	131.9	132.4	131.0	131.0	129.3	130.2	131.2	128.1	129.2
Fish	148.3	149.6	145.2	147.8	149.4	149.5	150.4	154.6	151.0	152.6
Eggs	121.2	133.1	121.0	118.0	116.8	115.4	123.5	113.9	110.7	106.0
Dairy products 2/	125.1	124.9	124.5	125.3	125.7	126.2	127.4	128.2	128.1	127.8
Fats & oils 3/	131.7	132.5	132.1	131.1	131.7	129.8	129.3	130.7	131.3	129.8
Fresh fruit	193.9	195.9	187.4	194.3	185.4	183.9	188.6	188.6	183.1	188.7
Processed fruit	131.8	132.2	130.9	131.3	130.5	131.4	131.5	136.0	136.5	138.8
Fresh vegetables	154.4	151.1	142.2	137.6	134.0	149.6	150.7	152.7	163.5	172.7
Potatoes	144.6	139.6	156.2	143.7	132.1	129.9	129.0	130.9	131.7	132.1
Processed vegetables	128.5	128.2	128.7	128.1	128.7	127.7	127.6	129.2	129.0	128.6
Cereals & bakery products	145.8	144.3	146.5	146.5	146.9	147.5	147.4	148.9	149.3	149.7
Sugar & sweets	129.3	128.3	130.3	129.6	130.5	130.6	130.9	132.0	132.4	132.9
<b>Beverages, nonalcoholic</b>	<b>114.1</b>	<b>114.9</b>	<b>112.9</b>	<b>112.8</b>	<b>113.9</b>	<b>113.0</b>	<b>112.5</b>	<b>114.9</b>	<b>116.0</b>	<b>115.3</b>
<b>Apparel</b>										
Apparel, commodities less footwear	127.4	127.7	123.2	130.4	132.0	132.2	128.2	126.0	128.7	132.3
Footwear	120.9	120.8	120.2	122.2	123.4	123.4	121.8	121.3	122.4	124.6
Tobacco & smoking products	202.7	197.6	204.7	205.7	206.1	209.0	211.7	212.6	213.4	213.5
<b>Beverages, alcoholic</b>	<b>142.8</b>	<b>142.2</b>	<b>143.8</b>	<b>144.4</b>	<b>144.5</b>	<b>144.0</b>	<b>143.9</b>	<b>144.8</b>	<b>145.7</b>	<b>146.7</b>

1/ Beef, veal, lamb, pork, & processed meat. 2/ Includes butter. 3/ Excludes butter.

Information contact: Ann Duncan (202) 219-0313.

Table 7.—Producer Price Indexes, U.S. Average (Not Seasonally Adjusted)

	Annual			1991				1992		
	1989	1990	1991 P	Mar	Oct	Nov R	Dec	Jan	Feb	Mar
	1982 = 100									
Finished goods 1/	113.8	119.2	121.7	120.9	122.2	122.3	121.9	121.7	121.9	122.0
Consumer foods	118.7	124.4	124.1	125.2	123.0	123.0	122.2	122.5	123.5	123.4
Fresh fruit & melons	113.2	118.1	129.4	135.1	124.8	112.3	99.8	100.0	88.7	85.7
Fresh & dried vegetables	116.7	119.1	103.8	97.2	78.1	106.5	80.1	108.3	135.1	132.4
Dried fruit	103.0	106.7	111.5	111.4	112.1	111.9	112.0	113.7	115.1	115.1
Canned fruit & juice	122.7	127.0	128.8	126.8	130.3	131.1	133.2	134.7	136.8	136.8
Frozen fruit & juice	123.9	139.0	115.1	112.9	117.1	129.7	125.8	133.9	134.8	134.4
Fresh veg. excl. potatoes	103.9	107.8	100.2	88.4	73.5	113.1	78.1	117.5	154.7	147.9
Canned veg. & juices	118.8	118.7	112.8	115.1	111.0	109.5	109.8	109.7	108.8	109.2
Frozen vegetables	115.5	118.4	117.8	118.3	118.8	118.8	118.8	118.8	118.1	115.8
Potatoes	153.8	157.3	125.7	134.8	97.0	93.2	96.4	94.7	92.8	95.8
Eggs	119.8	117.6	110.7	131.7	105.0	102.1	118.7	91.9	94.1	92.8
Bakery products	135.4	141.0	148.8	145.8	147.8	148.4	148.9	148.1	150.1	150.8
Meats	104.8	117.0	113.3	117.9	109.1	108.5	104.8	103.7	105.8	108.5
Beef & veal	108.9	118.0	112.1	118.2	106.9	108.6	106.4	108.9	110.2	111.2
Pork	97.7	119.8	113.0	117.7	107.4	101.0	96.7	92.8	95.1	95.2
Processed poultry	120.4	113.8	109.9	108.4	110.8	107.3	105.5	105.5	104.8	108.9
Fish	142.9	147.2	151.3	158.7	147.8	158.4	156.3	160.2	167.2	188.5
Dairy products	110.8	117.2	114.8	111.9	119.3	119.8	120.1	118.5	118.1	114.9
Processed fruits & vegetables	119.8	124.7	119.5	119.8	119.2	120.4	120.4	121.9	122.2	122.2
Shortening & cooking oil	118.8	123.2	118.4	122.7	114.8	113.0	114.1	112.0	113.2	115.3
Soft drinks	177.7	122.3	125.6	127.0	124.8	124.2	124.1	124.7	125.9	125.7
Consumer finished goods less foods	108.9	115.3	118.7	117.0	119.7	119.7	119.3	118.7	118.8	119.9
Beverages, alcoholic	115.2	117.2	123.7	124.0	123.1	123.4	123.3	125.7	125.9	125.9
Apparel	114.5	117.5	119.8	119.0	120.3	120.3	120.5	120.8	121.3	121.4
Footwear	120.8	125.8	128.8	128.0	129.1	129.3	129.8	129.8	129.8	132.0
Tobacco products	194.8	221.4	249.3	239.8	255.0	259.8	287.1	268.4	268.4	288.4
Intermediate materials 2/	112.0	114.5	114.4	114.2	114.2	114.0	113.7	113.2	113.8	113.8
Materials for food manufacturing	112.7	117.9	115.3	118.2	115.4	114.2	114.8	114.2	114.2	113.5
Flour	114.8	103.6	97.8	94.4	102.4	99.8	109.8	116.5	122.7	113.4
Refined sugar 3/	118.2	122.7	121.8	122.9	120.8	120.6	120.8	120.8	121.5	121.2
Crude vegetable oils	103.7	115.8	103.2	111.8	98.4	94.9	95.9	94.7	96.1	103.2
Crude materials 4/	103.1	108.9	101.2	101.2	99.9	99.7	97.7	97.3	99.0	98.8
Foodstuffs & feedstuffs	111.2	113.1	105.5	109.9	102.6	101.5	101.9	104.0	106.4	107.5
Fruits & vegetables & nuts 5/	114.8	117.5	114.5	113.3	98.1	108.5	88.2	99.9	108.3	104.1
Grains	108.4	97.4	92.0	94.0	94.8	96.4	97.7	103.1	108.2	108.5
Livestock	108.1	115.6	107.9	117.1	100.9	98.8	97.7	100.0	108.0	107.0
Poultry, live	128.8	118.8	111.2	110.2	109.1	108.8	105.1	108.9	102.8	105.4
Fibers, plant & animal	107.8	117.8	115.1	129.1	96.3	90.3	89.7	85.4	83.4	84.4
Fluid milk	98.8	100.8	89.3	83.9	98.1	99.3	100.5	98.4	95.2	92.0
Oilseeds	123.8	112.1	108.4	111.8	102.1	102.9	103.0	104.3	105.2	110.4
Tobacco, leaf	93.8	95.8	100.4	99.8	103.5	108.1	104.8	102.2	102.2	113.9
Sugar, raw cane	115.5	119.2	113.7	113.3	114.2	114.4	113.5	112.5	112.4	112.8
All commodities	112.2	118.3	118.5	118.2	118.4	118.4	115.9	115.8	118.1	118.1
Industrial commodities	111.8	115.8	118.5	115.7	118.7	118.7	118.1	115.8	118.0	115.9
All foods 6/	117.8	123.2	122.2	123.3	121.0	121.1	120.2	120.4	121.3	121.2
Farm products & processed foods & feeds	115.4	118.8	118.4	118.3	115.1	114.8	114.5	115.3	118.5	118.8
Farm products	110.9	112.2	105.8	109.7	101.5	101.8	100.7	103.0	105.8	108.4
Processed foods & feeds 6/	117.8	121.9	121.9	122.6	121.9	121.4	121.4	121.4	122.0	122.0
Cereal & bakery products	131.1	134.2	138.1	136.8	139.9	140.0	141.9	142.7	144.0	143.4
Sugar & confectionery	120.1	123.1	128.4	127.8	128.5	128.8	128.7	129.3	128.5	127.5
Beverages	118.4	120.8	124.1	125.3	123.0	123.0	122.9	124.3	124.8	124.8

1/ Commodities ready for sale to ultimate consumer. 2/ Commodities requiring further processing to become finished goods. 3/ All types & sizes of refined sugar. 4/ Products entering market for the first time that have not been manufactured at that point. 5/ Fresh & dried. 6/ Includes all raw, intermediate, & processed foods (excludes soft drinks, alcoholic beverages, & manufactured animal feeds). P = preliminary. R = revised. — = not available.

Information contact: Ann Duncan (202) 219-0313.

## Farm-Retail Price Spreads

Table 8.—Farm-Retail Price Spreads

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
<b>Market basket 1/</b>										
Retail cost (1982-84=100)	124.8	133.5	137.4	137.2	135.9	138.6	137.2	137.8	137.9	138.8
Farm value (1982-84=100)	107.1	113.1	108.1	109.9	101.6	101.1	101.6	100.2	101.7	104.0
Farm-retail spread (1982-84=100)	134.1	144.5	154.2	151.8	154.4	155.7	156.4	158.0	157.4	157.8
Farm value-retail cost (%)	30.1	29.7	27.0	28.1	28.2	25.9	25.9	25.5	25.8	26.2
<b>Meat products</b>										
Retail cost (1982-84=100)	116.7	128.5	132.5	133.1	131.3	131.5	130.8	130.0	130.3	131.1
Farm value (1982-84=100)	103.8	116.8	110.0	117.0	103.3	98.1	97.8	97.0	101.3	104.7
Farm-retail spread (1982-84=100)	130.2	140.4	155.6	149.7	160.0	165.8	164.7	163.9	160.0	158.1
Farm value-retail cost (%)	44.9	46.0	42.0	44.5	39.8	37.8	37.9	37.8	39.4	40.5
<b>Dairy products</b>										
Retail cost (1982-84=100)	115.6	126.5	125.1	124.9	125.7	126.2	127.4	128.2	128.1	127.8
Farm value (1982-84=100)	99.1	101.7	90.0	85.8	95.9	98.2	101.9	98.6	95.4	93.6
Farm-retail spread (1982-84=100)	130.8	149.5	157.5	161.2	153.2	152.0	150.9	155.5	158.2	159.3
Farm value-retail cost (%)	41.1	38.5	34.5	32.9	38.6	37.3	38.4	38.9	35.7	35.1
<b>Poultry</b>										
Retail cost (1982-84=100)	132.7	132.5	131.5	131.9	131.0	129.3	130.2	131.2	129.1	128.2
Farm value (1982-84=100)	117.1	107.8	102.5	101.1	103.1	99.8	98.4	99.4	98.1	98.4
Farm-retail spread (1982-84=100)	150.6	181.1	164.9	167.3	163.1	163.5	166.8	167.8	162.6	162.5
Farm value-retail cost (%)	47.2	43.5	41.7	41.0	42.1	41.2	40.4	40.5	41.0	41.1
<b>Eggs</b>										
Retail cost (1982-84=100)	118.5	124.1	121.2	133.1	116.8	115.4	123.5	113.9	110.7	106.0
Farm value (1982-84=100)	107.5	108.0	100.9	128.7	95.0	94.5	109.9	83.5	74.4	72.9
Farm-retail spread (1982-84=100)	138.1	153.2	157.6	141.0	155.9	152.9	148.1	168.5	175.8	165.5
Farm value-retail cost (%)	58.3	55.9	53.5	62.1	52.3	52.6	57.1	47.1	43.2	44.2
<b>Cereal &amp; bakery products</b>										
Retail cost (1982-84=100)	132.4	140.0	145.8	144.3	146.9	147.5	147.4	148.9	149.3	149.7
Farm value (1982-84=100)	101.7	90.5	85.3	83.2	90.8	91.8	85.8	87.4	103.9	98.7
Farm-retail spread (1982-84=100)	136.7	146.9	154.3	152.8	154.7	155.3	154.6	156.1	155.6	156.8
Farm value-retail cost (%)	9.4	7.9	7.2	7.1	7.6	7.6	8.0	8.0	8.5	8.1
<b>Fresh fruits</b>										
Retail cost (1982-84=100)	154.7	174.6	200.1	197.4	194.6	190.8	196.9	196.7	188.6	191.5
Farm value (1982-84=100)	108.5	128.3	174.4	176.9	145.4	150.8	144.1	132.8	125.2	118.2
Farm-retail spread (1982-84=100)	176.0	195.9	211.9	206.8	217.3	209.3	221.3	226.2	214.9	225.4
Farm value-retail cost (%)	22.2	23.2	27.5	28.3	23.6	25.0	23.1	21.3	21.2	19.5
<b>Fresh vegetables</b>										
Retail cost (1982-84=100)	143.1	151.1	154.4	151.1	134.0	149.6	150.7	152.7	163.5	172.7
Farm value (1982-84=100)	123.3	124.4	110.8	124.0	84.8	104.2	82.5	103.8	123.0	153.7
Farm-retail spread (1982-84=100)	153.2	164.9	178.8	165.0	159.3	173.0	185.7	177.8	184.3	182.5
Farm value-retail cost (%)	29.3	29.0	24.4	27.9	21.5	23.8	18.6	23.1	25.5	30.2
<b>Processed fruits &amp; vegetables</b>										
Retail cost (1982-84=100)	125.0	132.7	130.2	130.3	129.6	129.7	129.7	132.9	134.3	134.2
Farm value (1982-84=100)	132.4	144.0	120.8	121.1	117.0	118.3	128.7	126.8	126.8	126.8
Farm-retail spread (1982-84=100)	122.7	129.1	133.2	133.2	133.5	133.9	130.0	134.8	138.7	136.5
Farm value-retail cost (%)	25.2	25.8	22.0	22.1	21.5	21.3	23.6	22.7	22.4	22.5
<b>Fats &amp; oils</b>										
Retail cost (1982-84=100)	121.2	126.3	131.7	132.5	131.7	129.8	129.3	130.7	131.3	129.8
Farm value (1982-84=100)	95.6	107.1	98.0	106.2	92.4	90.4	91.0	90.7	89.2	96.7
Farm-retail spread (1982-84=100)	130.8	133.4	144.2	142.2	146.1	144.3	143.4	145.4	146.8	142.0
Farm value-retail cost (%)	21.2	22.8	20.0	21.6	18.9	18.7	18.9	18.7	18.3	20.0

	Annual			1991			1992			
	1989	1990	1991	Apr	Nov	Dec	Jan	Feb	Mar	Apr
<b>Beef, Choice</b>										
Retail price 2/ (cts./lb.)	265.7	281.0	288.3	297.1	281.0	279.4	278.7	282.5	285.6	287.6
Wholesale value 3/ (cts.)	176.8	189.6	182.5	194.1	175.1	171.8	176.6	184.6	183.3	182.6
Net farm value 4/ (cts.)	157.6	168.4	160.2	175.3	152.5	149.2	155.2	165.7	168.5	168.3
Farm-retail spread (cts.)	108.1	112.6	128.1	121.9	128.5	130.2	123.5	116.8	117.1	119.3
Wholesale-retail 5/ (cts.)	88.9	91.4	105.8	103.0	105.9	107.6	102.1	97.9	102.3	105.0
Farm-wholesale 6/ (cts.)	19.2	21.2	22.3	18.8	22.6	22.6	21.4	18.9	14.8	14.3
Farm value-retail price (%)	59	60	56	59	54	53	56	59	59	59
<b>Pork</b>										
Retail price 2/ (cts./lb.)	182.9	212.6	211.9	211.7	205.1	200.9	198.7	199.8	198.2	194.2
Wholesale value 3/ (cts.)	99.2	118.3	108.9	109.7	97.6	98.3	93.9	99.3	95.6	95.2
Net farm value 4/ (cts.)	70.4	87.2	78.4	81.4	60.6	62.1	59.2	64.9	62.4	66.4
Farm-retail spread (cts.)	112.5	125.4	133.5	130.3	144.5	138.8	139.5	134.9	135.8	127.8
Wholesale-retail 5/ (cts.)	83.7	94.3	103.0	102.0	107.5	102.6	105.1	100.5	102.6	99.0
Farm-wholesale 6/ (cts.)	28.8	31.1	30.5	28.3	37.0	36.2	34.4	34.4	33.2	28.8
Farm value-retail price (%)	38	41	37	38	30	31	30	32	31	34

1/ Retail costs are based on CPI-U of retail prices for domestically produced farm foods, published monthly by BLS. The farm value is the payment for the quantity of farm equivalent to the retail unit, less allowance for byproduct. Farm values are based on prices at first point of sale & may include marketing charges such as grading & packing for some commodities. The farm-retail spread, the difference between the retail price & the farm value, represents charges for assembling, processing, transporting, distributing. 2/ Weighted average price of retail cuts from pork & choice yield grade 3 beef. Prices from BLS. 3/ Value of wholesale (boxed beef) & wholesale cuts (pork) equivalent to 1 lb. of retail cuts adjusted for transportation costs & byproduct values. 4/ Market value to producer for live animal equivalent to 1 lb. of retail cuts, minus value of byproducts. 5/ Charges for retailing & other marketing services such as wholesaling, and in-city transportation. 6/ Charges for livestock marketing, processing, & transportation.

Information contacts: Denis Dunham (202) 219-0870, Larry Duewer (202) 219-0712.



Table 9.—Price Indexes of Food Marketing Costs

	Annual			1990	1991				1992
	1989	1990	1991	IV	I	II	III	IV P	I P
	1987=100*								
<b>Labor—hourly earnings &amp; benefits</b>	379.5	393.2	409.7	398.7	405.8	409.7	408.8	414.3	419.9
Processing	390.3	404.4	420.4	409.3	418.5	420.9	418.8	425.2	430.2
Wholesaling	409.1	422.0	443.8	427.2	440.6	444.7	443.2	446.6	454.7
Retailing	355.8	369.5	383.9	375.8	379.7	383.0	383.7	389.1	392.2
<b>Packaging &amp; containers</b>	384.8	367.8	371.2	369.4	375.0	372.0	389.8	368.0	364.0
Paperboard boxes & containers	323.7	323.9	320.3	322.5	322.4	318.4	317.9	322.5	324.4
Metal cans	443.2	455.0	470.5	456.3	468.1	469.2	471.7	473.0	477.4
Paper bags & related products	409.2	413.0	410.9	421.3	423.1	419.5	411.4	389.6	351.0
Plastic films & bottles	313.2	307.1	310.7	309.2	318.0	311.8	306.8	306.3	308.6
Glass containers	409.9	427.3	446.0	429.8	445.4	445.9	448.2	446.3	446.1
Metal foil	274.4	258.4	251.8	264.7	263.0	257.5	245.0	240.8	241.4
<b>Transportation services</b>	404.9	411.3	422.8	415.7	420.7	423.2	422.7	423.7	425.4
Advertising	409.1	433.0	460.1	441.7	453.5	458.0	462.2	466.7	477.4
Fuel & power	619.4	671.4	655.7	750.1	679.5	636.8	656.8	649.6	620.4
Electric	468.9	477.7	508.3	480.1	490.6	505.3	530.6	506.9	497.1
Petroleum	592.1	744.8	649.8	989.8	739.1	599.5	628.4	634.4	584.2
Natural gas	1,070.9	1,071.0	1,065.0	1,078.2	1,089.8	1,056.0	1,051.5	1,062.6	1,049.6
<b>Communications, water &amp; sewage</b>	247.3	253.1	261.7	255.0	258.4	260.4	263.5	264.5	265.3
Rent	277.1	273.0	281.3	270.3	282.4	281.8	280.5	280.5	278.9
Maintenance & repair	410.7	428.7	442.7	432.4	435.7	441.1	445.4	448.5	451.8
Business services	388.3	405.8	423.3	412.7	415.9	422.8	428.7	427.6	431.2
Supplies	321.4	321.1	319.3	328.6	325.5	319.5	314.6	317.5	314.5
Property taxes & insurance	439.7	462.2	480.5	471.4	474.0	477.4	482.4	488.0	491.3
Interest, short-term	172.1	155.5	114.5	150.3	129.1	118.5	114.1	96.2	82.0
<b>Total marketing cost index</b>	384.8	397.8	409.1	405.7	408.2	408.2	408.9	411.2	412.1

\* Indexes measure changes in employee earnings & benefits & in prices of supplies & services used in processing, wholesaling, & retailing U.S. farm foods purchased for at-home consumption. P = preliminary.

Information contact: Denis Dunham (202) 219-0870.

## Livestock &amp; Products

Table 10.—U.S. Meat Supply &amp; Use

	Beg. stocks	Produc- tion 1/	Imports	Total supply	Exports	Ending stocks	Consumption		Primary market price 3/
							Total	Per capita 2/	
Million pounds 4/							Pounds		
Beef									
1989	422	23,087	2,179	25,688	1,023	335	24,330	69.3	73.86
1990	335	22,743	2,356	25,434	1,006	397	24,031	67.8	78.56
1991	397	22,917	2,406	25,720	1,188	419	24,113	67.3	74.28
1992 F	419	23,162	2,370	25,951	1,350	325	24,276	67.3	72-76
Pork									
1989	437	15,813	896	17,146	262	313	16,571	52.0	44.03
1990	313	15,354	899	16,565	239	296	16,030	49.8	54.45
1991	296	15,999	775	17,070	283	393	16,394	50.4	48.88
1992 F	393	17,221	785	18,399	300	390	17,709	54.0	39-43
Veal 5/									
1989	5	355	0	360	0	4	356	1.2	91.84
1990	4	327	0	331	0	6	325	1.1	96.51
1991	6	308	0	312	0	7	305	1.0	99.95
1992 F	7	287	0	294	0	5	289	0.9	90-94
Lamb & mutton									
1989	8	347	63	416	2	8	408	1.5	67.32
1990	8	363	59	430	3	8	419	1.5	55.54
1991	8	363	60	431	3	8	422	1.5	53.21
1992 F	8	359	60	425	3	9	413	1.4	56-60
Total red meat									
1989	870	39,802	3,137	43,610	1,287	660	41,663	124.0	—
1990	660	38,787	3,313	42,760	1,248	707	40,805	120.1	—
1991	707	39,585	3,241	43,533	1,474	825	41,234	120.2	—
1992 F	825	41,315	3,215	45,069	1,653	729	42,687	124.4	—
Broilers									
1989	36	17,424	0	17,460	814	38	16,608	67.1	59.0
1990	38	18,660	0	18,698	1,443	26	17,529	70.1	54.8
1991	26	19,850	0	19,876	1,261	36	18,579	73.6	52.0
1992 F	36	20,865	0	20,901	1,210	35	19,656	77.2	48-52
Mature chicken									
1989	157	568	0	725	24	169	511	2.1	—
1990	189	588	0	777	25	224	528	2.1	—
1991	224	571	0	795	28	274	492	2.0	—
1992 F	274	597	0	871	28	250	593	2.3	—
Turkeys									
1989	250	4,285	0	4,535	41	236	4,259	17.2	66.7
1990	236	4,734	0	4,970	54	308	4,610	18.4	63.2
1991	306	4,830	0	5,136	103	284	4,768	18.9	61.3
1992 F	264	4,986	0	5,250	120	260	4,870	19.1	59-63
Total poultry									
1989	442	22,278	0	22,720	878	463	21,378	66.4	—
1990	463	23,982	0	24,445	1,222	557	22,666	90.7	—
1991	557	25,250	0	25,870	1,392	575	23,840	94.4	—
1992 F	575	26,447	0	27,022	1,358	545	25,119	98.7	—
Red meat & poultry									
1989	1,312	61,880	3,138	66,330	2,165	1,123	63,042	210.4	—
1990	1,123	62,769	3,313	67,205	2,469	1,264	63,472	210.7	—
1991	1,264	64,835	3,241	69,340	2,867	1,400	65,074	214.6	—
1992 F	1,400	67,476	3,215	72,091	3,011	1,274	67,806	222.4	—

1/ Total including farm production for red meats & federally inspected plus nonfederally inspected for poultry. 2/ Retail weight basis. (The beef carcass-to-retail conversion factor was 70.5). 3/ Dollars per cwt for red meat; cents per pound for poultry. Beef: Medium # 1, Nebraska Direct 1,100-1,300 lb.; pork: barrows & gilts, 8 markets; veal: farm price of calves, lamb & mutton: Choice slaughter lambs, San Angelo; broilers: wholesale 12-city average; turkeys: wholesale NY 8-16 lb. young hens. 4/ Carcass weight for red meats & certified ready-to-cook for poultry. 5/ Beginning 1989 veal trade no longer reported separately. F = forecast. — = not available.

Information contacts: Polly Cochran, or Maxine Davis (202) 219-0787.

Table 11.—U.S. Egg Supply &amp; Use

	Beg. stocks	Pro- duc- tion	Im- ports	Total supply	Ex- ports	Hatch- ing use	Ending stocks	Consumption		
								Total	Per capita	Wholesale price*
									No.	Cts./doz.
Million dozen										
1987	10.4	5,868.2	5.6	5,884.2	111.2	599.1	14.4	5,159.5	254.9	61.8
1988	14.4	5,784.2	5.3	5,803.9	141.8	605.9	15.2	5,041.0	248.8	62.1
1989	15.2	5,598.2	25.2	5,638.5	91.0	643.9	10.7	4,892.4	237.3	61.9
1990	10.7	5,665.3	9.1	5,685.0	100.5	678.5	11.6	4,894.4	234.9	62.2
1991	11.6	5,757.8	2.3	5,771.7	154.3	708.1	13.0	4,896.4	232.8	77.5
1992 F	13.0	5,833.3	2.6	5,848.9	155.0	741.2	12.0	4,940.7	233.0	66-72

\* Cartoned grade A large eggs, New York. F = forecast.

Information contact: Maxine Davis (202) 219-0767.

Table 12.—U.S. Milk Supply &amp; Use

Production	Farm use	Commercial		Im-ports	Total commercial supply	CCC net re-movals	Commercial		All milk price 1/	CCC net removals		
		Farm market-ings	Beg. stock				Ending stocks	Disap-pear-ance		Skim solids basis	Total solids basis 2/	
		Billion pounds (milkfat basis)								\$/cwt	Billion pounds	
1985	143.0	2.5	140.8	4.8	2.8	148.2	13.3	4.5	130.4	12.76	17.2	15.6
1986	143.1	2.4	140.7	4.5	2.7	147.9	10.8	4.1	133.0	12.61	14.3	12.9
1987	142.7	2.3	140.5	4.1	2.5	147.1	6.8	4.6	135.7	12.54	9.3	8.3
1988	145.2	2.2	142.9	4.6	2.4	149.9	9.1	4.3	136.5	12.26	6.5	8.9
1989	144.2	2.1	142.2	4.3	2.5	149.0	9.4	4.1	135.5	13.56	0.4	4.0
1990	148.3	2.0	146.3	4.1	2.7	153.1	9.0	6.1	139.0	13.73	1.6	4.6
1991	148.5	2.0	146.5	5.1	2.6	154.3	10.5	4.5	139.3	12.23	4.0	6.6
1992	150.3	2.0	148.3	4.6	2.8	155.4	8.6	4.5	142.4	13.20	1.2	4.1

1/ Delivered to plants &amp; dealers; does not reflect deductions. 2/ Arbitrarily weighted average of milkfat basis (40 percent) &amp; skim solids basis (60 percent). F = forecast.

Information contact: Jim Miller (202) 219-0770.

Table 13.—Poultry &amp; Eggs

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
<b>Broilers</b>										
Federally inspected slaughter, certified (mil. lb.)	17,334.2	18,553.9	19,727.7	1,530.9	1,833.9	1,513.4	1,615.9	1,775.5	1,579.1	1,757.6
Wholesale price, 12-city (cts./lb.)	59.0	54.8	52.0	51.4	51.6	50.3	48.5	50.1	50.3	50.2
Price of grower feed (\$/ton)	237	218	207	20.8	207	211	207	207	206	205
Broiler-feed price ratio 1/	3.0	3.0	3.0	2.9	3.0	2.8	2.8	2.9	2.9	2.9
Stocks beginning of period (mil. lb.)	35.9	38.3	26.1	34.5	41.5	39.5	38.8	36.1	39.3	38.4
Broiler-type chicks hatched (mil.) 2/	5,946.9	6,314.6	6,670.1	571.1	531.1	511.7	571.5	575.2	531.3	595.9
<b>Turkeys</b>										
Federally inspected slaughter, certified (mil. lb.)	4,174.8	4,560.9	4,651.9	329.7	482.0	419.2	349.9	382.9	331.7	380.0
Wholesale price, Eastern U.S., 8-10 lb. young hens (cts./lb.)	66.7	63.2	61.2	59.1	60.5	63.1	65.2	54.7	55.0	58.8
Price of turkey grower feed (\$/ton)	251.0	238	230	231	243	242	241	241	235	239
Turkey-feed price ratio 1/	3.2	3.2	3.3	3.2	3.2	3.3	3.4	3.1	3.0	3.1
Stocks beginning of period (mil. lb.)	249.7	235.9	306.4	342.2	667.2	653.0	305.5	264.1	325.5	364.1
Poults placed in U.S. (mil.)	290.7	304.9	308.0	25.8	22.1	22.2	24.4	25.7	25.5	27.8
<b>Eggs</b>										
Farm production (mil.)	67,178	67,983	69,094	5,910	5,898	5,789	6,011	5,927	5,540	6,032
Average number of layers (mil.)	269	270	274	272	276	277	279	278	278	278
Rate of lay (eggs per layer on farms)	249.5	251.7	252.4	21.7	21.4	20.9	21.6	21.2	19.9	21.7
Cartoned price, New York, grade A large (cts./doz.) 3/	81.9	82.2	77.5	91.9	74.5	75.8	80.0	66.6	61.7	63.1
Price of laying feed (\$/ton)	209	200	192	192	194	196	199	201	201	201
Egg-feed price ratio 1/	6.7	7.0	6.9	8.1	6.4	6.4	7.2	6.8	5.4	5.4
<b>Stocks, first of month</b>										
Shell (mil. doz.)	0.27	0.36	0.45	0.27	0.39	0.48	0.36	0.63	0.60	0.75
Frozen (mil. doz.)	14.9	10.3	11.2	10.6	12.5	12.7	11.5	12.3	15.2	14.6
<b>Replacement chicks hatched (mil.)</b>	383	398	417	36.8	34.1	30.4	32.7	32.5	31.9	36.3

1/ Pounds of feed equal in value to 1 dozen eggs or 1 lb. of broiler or turkey liveweight. 2/ Placement of broiler chicks is currently reported for 15 States only; henceforth, hatch of broiler-type chicks will be used as a substitute. 3/ Price of cartoned eggs to volume buyers for delivery to retailers.

Information contact: Maxine Davis (202) 219-0767.



Table 14.—Dairy

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Milk prices, Minnesota-Wisconsin, 3.5% fat (\$/cwt) 1/	12.37	12.21	11.05	10.02	12.50	12.48	12.10	11.71	11.21	10.98
Wholesale prices										
Butter, grade A Chl. (cts./lb.)	127.9	102.1	99.3	97.2	106.2	104.6	98.4	94.9	86.2	86.2
Am. cheese, Wis. assembly pt. (cts./lb.)	138.8	138.7	124.4	111.5	140.2	135.6	130.2	125.3	119.0	119.8
Nonfat dry milk (cfs./lb.) 2/	105.5	100.6	94.0	85.1	114.8	110.7	108.6	95.3	97.6	101.8
USDA net removals 3/										
Total milk equiv. (mil. lb.) 4/	9,357.0	8,951.2	10,485	1,264.3	141.3	566.5	757.1	2,128.2	1,410.9	1,286.8
Butter (mil. lb.)	413.4	400.3	442.8	52.0	5.7	25.2	33.8	96.3	63.6	58.0
Am. cheese (mil. lb.)	37.4	21.5	81.6	13.0	1.1	1.1	1.6	2.6	2.6	2.3
Nonfat dry milk (mil. lb.)	0	117.8	269.3	42.8	8.9	11.0	14.7	9.7	12.7	7.2
Milk										
Milk prod. 21 States (mil. lb.)	122,509	125,772	125,683	11,084	10,212	9,926	10,418	10,684	10,230	11,097
Milk per cow (lb.)	14,389	14,778	14,977	1,310	1,224	1,192	1,252	1,288	1,237	1,343
Number of milk cows (1,000)	8,526	8,512	8,392	8,460	8,346	8,329	8,322	8,296	8,273	8,260
U.S. milk production (mil. lb.)	144,239	148,314	148,525	7/ 13,106	7/ 12,102	7/ 11,763	7/ 12,347	7/ 12,666	7/ 12,128	7/ 13,155
Stock, beginning										
Total (mil. lb.)	8,379	9,036	13,359	15,901	17,649	16,602	15,886	15,841	16,731	18,392
Commercial (mil. lb.)	4,256	4,120	5,148	5,896	5,243	4,640	4,257	4,461	4,936	5,063
Government (mil. lb.)	4,122	4,916	8,213	10,005	12,405	11,963	11,629	11,379	11,795	13,329
Imports, total (mil. lb.)	2,499	2,690	2,629	154	281	256	287	160	142	—
Commercial disappearance (mil. lb.)	135,439	138,979	139,308	11,926	12,651	11,867	11,499	10,049	10,574	—
Butter										
Production (mil. lb.)	1,295.4	1,302.2	1,336.3	129.0	102.3	100.8	129.4	156.0	132.0	129.9
Stocks, beginning (mil. lb.)	214.7	256.2	416.1	522.1	597.2	567.1	543.0	539.4	568.6	630.3
Commercial disappearance (mil. lb.)	876.0	915.2	903.2	86.8	103.0	83.7	89.8	51.4	67.4	—
American cheese										
Production (mil. lb.)	2,674.1	2,894.2	2,804.9	250.4	226.4	218.3	247.7	245.5	231.3	246.4
Stocks, beginning (mil. lb.)	293.0	236.2	347.4	368.6	375.0	338.7	320.3	318.7	340.4	350.3
Commercial disappearance (mil. lb.)	2,683.1	2,784.4	2,787.9	228.1	259.9	235.2	246.6	219.6	219.6	—
Other cheese										
Production (mil. lb.)	2,941.3	3,167.0	3,285.9	279.7	294.6	284.0	286.0	268.6	265.8	296.3
Stocks, beginning (mil. lb.)	104.7	93.2	110.6	107.5	103.9	91.5	89.8	97.5	100.0	97.9
Commercial disappearance (mil. lb.)	3,208.9	3,426.4	3,574.0	296.7	336.7	313.7	310.1	279.1	279.6	—
Nonfat dry milk										
Production (mil. lb.)	874.7	878.6	879.0	90.0	48.7	53.3	86.0	80.2	78.1	82.8
Stocks, beginning (mil. lb.)	53.1	49.5	161.9	207.1	302.6	277.7	225.9	214.8	190.0	153.1
Commercial disappearance (mil. lb.)	873.0	697.6	662.9	53.9	49.0	45.1	47.3	70.9	61.7	—
Frozen dessert										
Production (mil. gal.) 5/	1,214.0	1,174.6	1,196.1	99.9	93.6	77.2	76.0	83.3	87.8	108.6
	Annual			1990		1991				1992
	1989	1990	1991	III	IV	I	II	III	IV P	I P
Milk production (mil. lb.)	144,239	148,319	148,535	36,611	36,307	37,425	38,633	38,265	36,212	37,949
Milk per cow (lb.)	14,244	14,648	14,868	3,618	3,577	3,705	3,864	3,647	3,651	3,851
No. of milk cows (1,000)	10,126	10,127	9,990	10,118	10,151	10,101	9,999	9,940	9,918	9,854
Milk-feed price ratio 5/	1.65	1.71	1.58	1.74	1.57	1.49	1.47	1.59	1.77	1.68
Returns over concentrate costs (\$/cwt milk)	10.18	10.39	9.00	10.50	9.03	8.30	8.10	9.00	10.50	9.70

1/ Manufacturing grade milk. 2/ Prices paid f.o.b. Central States Production area. 3/ Includes products exported through the Dairy Export Incentive Program (DEIP). 4/ Milk equivalent, fat basis. 5/ Hard ice cream, ice milk, & hard sherbet. 6/ Based on average milk price after adjustment for price support deductions. 7/ Estimated. P = preliminary. — = not available.

Information contact: LaVerne Y. Williams (202) 219-0770.

Table 15.—Wool

	Annual			1990		1991				1992
	1989	1990	1991	IV	I	II	III	IV	I P	
U.S. wool price, (cts./lb.) 1/	370	256	199	227	197	200	217	182	209	
Imported wool price, (cts./lb.) 2/	354	287	187	270	235	199	194	222	250	
U.S. mill consumption, scoured										
Apparel wool (1,000 lb.)	120,534	120,622	143,519	30,497	33,320	38,691	35,910	35,598	—	
Carpet wool (1,000 lb.)	14,122	12,124	14,363	2,138	3,088	3,119	4,564	3,592	—	

1/ Wool price delivered at U.S. mills, clean basis, Graded Territory 64's (20.60-22.04 microns) staple 2-3/4" & up. 2/ Wool price, Charleston, SC warehouse, clean basis, Australian 60/62's, type 64A (24 micron). Duty since 1982 has been 10.0 cents. — = not available.

Information contact: John Lawler (202) 219-0840.

Table 16.—Meat Animals

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Cattle on feed (7 States)										
Number on feed (1,000 head) 1/	8,045	8,378	8,992	8,874	7,218	8,013	8,477	8,397	8,203	8,155
Placed on feed (1,000 head)	20,834	21,030	19,708	1,705	2,539	1,917	1,456	1,565	1,492	1,496
Marketings (1,000 head)	19,422	19,198	19,066	1,499	1,865	1,376	1,443	1,660	1,420	1,516
Other disappearance (1,000 head)	1,079	1,218	1,230	37	77	77	93	99	120	117
Beef steer-corn price ratio, Omaha 2/	30.3	32.8	31.6	34.0	29.9	30.5	29.7	29.9	31.0	30.4
Hog-corn price ratio, Omaha 2/	18.4	23.1	21.1	21.8	18.9	18.5	16.8	15.7	16.7	15.5
Market prices (\$/cwt)										
Slaughter cattle										
Choice steers, Omaha 1,000-1,100 lb.	72.52	77.40	73.83	80.75	68.91	68.90	68.64	71.20	75.71	76.58
Choice steers, Neb. Direct, 1,100-1,300 lb.	73.86	78.56	74.28	81.23	69.79	71.02	69.07	72.55	76.75	78.02
Boning utility cows, Sioux Falls	48.98	53.60	50.31	52.06	47.83	43.77	47.22	43.53	45.25	45.94
Feeder cattle										
Medium no. 1, Oklahoma City										
600-700 lb.	86.66	92.15	92.74	96.38	88.60	88.60	83.08	82.41	83.95	84.80
Slaughter hogs										
Barrows & gilts, 8-markets	44.03	54.45	48.88	51.75	43.16	37.82	38.55	36.91	40.31	38.82
Feeder pigs										
S. Mo. 40-50 lb. (per head)	33.63	51.46	39.84	63.63	33.75	30.22	28.17	27.18	36.72	37.57
Slaughter sheep & lambs										
Lambs, Choice, San Angelo	67.32	55.54	52.73	54.88	51.20	52.08	54.92	58.81	57.88	68.00
Ewes, Good, San Angelo	38.58	35.21	31.98	34.88	28.80	30.75	32.92	38.88	40.88	42.50
Feeder lambs										
Choice, San Angelo	79.85	62.95	53.27	59.25	51.70	52.75	54.75	62.00	66.00	70.00
Wholesale meat prices, Midwest										
Boxed beef cut-out value	114.78	123.21	118.31	123.24	113.04	113.43	111.16	114.38	119.65	119.14
Canner & cutter cow beef	94.43	99.96	99.44	103.43	96.16	91.06	93.02	92.87	95.60	96.49
Pork loins, 14-18 lb. 3/	101.09	117.52	108.39	110.33	100.87	88.63	90.19	96.89	99.13	94.10
Pork bellies, 12-14 lb.	34.14	53.80	47.79	58.52	32.28	30.04	28.79	28.05	29.44	28.01
Hams, skinned, 14-17 lb.	69.39	87.70	81.80	81.42	87.25	81.00	84.00	—	—	—
All fresh beef retail price 4/	238.97	254.99	262.12	261.66	259.12	261.46	261.66	257.56	257.08	259.34
Commercial slaughter (1,000 head) 5/										
Cattle	33,917	33,242	32,667	2,509	2,932	2,578	2,562	2,927	2,439	2,696
Steers	16,539	16,587	16,732	1,248	1,465	1,264	1,299	1,450	1,255	1,369
Heifers	10,408	10,090	9,719	741	882	736	700	877	690	759
Cows	8,316	5,920	5,623	472	525	531	519	551	449	486
Bulls & stags	657	644	614	48	61	48	44	49	45	52
Calves	2,172	1,789	1,442	128	131	128	134	131	113	122
Sheep & lambs	5,465	5,854	5,714	566	523	467	480	484	436	497
Hogs	88,691	85,135	88,163	7,216	8,498	7,941	7,926	8,343	7,330	8,121
Commercial production (mil. lb.)										
Beef	22,974	22,634	22,799	1,720	2,115	1,813	1,782	2,039	1,707	1,849
Veal	344	316	296	25	27	26	27	28	25	27
Lamb & mutton	341	357	359	36	32	29	31	31	28	32
Pork	15,759	15,299	15,948	1,300	1,534	1,456	1,444	1,524	1,329	1,467

	Annual			1990	1991				1992	
	1989	1990	1991	IV	I	II	III	IV	I	II
Cattle on feed (13 States)										
Number on feed (1,000 head) 1/	9,688	9,943	10,827	9,062	10,827	10,739	9,461	8,820	10,135	9,703
Placed on feed (1,000 head)	24,469	24,803	23,212	7,401	5,702	5,008	5,414	7,086	5,393	—
Marketings (1,000 head)	22,940	22,526	22,388	5,289	5,328	5,820	5,973	5,267	5,421	*5,670
Other disappearance (1,000 head)	1,274	1,393	1,514	347	482	464	282	306	404	—
Hogs & pigs (10 States) 6/										
Inventory (1,000 head) 1/	43,210	42,200	42,900	44,120	42,900	41,990	44,520	46,900	45,735	44,770
Breeding (1,000 head) 1/	5,335	5,275	5,257	5,300	5,257	5,450	5,720	5,675	5,810	5,675
Market (1,000 head) 1/	37,875	36,925	37,643	38,820	37,643	36,540	38,800	41,225	40,125	39,195
Farrowings (1,000 head)	9,203	8,960	9,479	2,238	2,129	2,588	2,441	2,348	2,289	*2,612
Pig crop (1,000 head)	71,807	70,589	75,035	17,459	16,770	20,632	19,278	18,551	18,475	—

1/ Beginning of period. 2/ Bushels of corn equal in value to 100 pounds live weight. 3/ Prior to 1984, 8-14 lb.; 1984 & 1985, 14-17 lb.; beginning 1986, 14-18 lb. 4/ New series estimating the composite price of all beef grades & ground beef sold by retail stores. This new series is in addition to, but does not replace, the series for the retail price of Choice beef that appears in table 8. 5/ Classes estimated. 6/ Quarters are Dec. of preceding year-Feb. (I), Mar.-May (II), June-Aug. (III), & Sept.-Nov. (IV). May not add to NASS totals due to rounding. — = not available. \* Intentions.

Information contact: Polly Cochran (202) 219-0767.

## Crops &amp; Products

Table 17.—Supply & Utilization<sup>1,2</sup>

	Area			Yield	Production	Total supply 4/	Feed and residual	Other domestic use	Exports	Total use	Ending stocks	Farm price 5/
	Set aside 3/	Planted	Harvested									
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
Wheat												
1987/88	23.9	65.8	55.9	37.7	2,108	3,945	280	808	1,598	2,684	1,261	2.57
1988/89	22.5	65.5	53.2	34.1	1,812	3,096	148	829	1,419	2,394	702	3.72
1989/90	9.6	76.6	62.2	32.7	2,037	2,762	143	849	1,233	2,225	536	3.72
1990/91*	7.5	77.2	69.3	39.5	2,738	3,309	494	881	1,068	2,443	868	2.61
1991/92*	15.4	69.9	57.7	34.3	1,981	2,882	325	885	1,250	2,490	421	3.03
1992/93*	—	**70.1	—	—	2,268	2,729	175	905	1,200	2,280	449	3.15-3.55
Rice												
	Mil. acres		Lb./acre					Mil. cwt (rough equiv.)				\$/cwt
1987/88	1.67	2.36	2.33	5,555	129.6	184.0	—	6/ 80.4	72.2	152.8	31.4	7.27
1988/89	1.09	2.93	2.90	5,514	159.9	195.1	—	6/ 82.5	85.9	168.4	26.7	8.83
1989/90	1.16	2.73	2.69	5,749	154.5	185.8	—	6/ 82.1	77.2	159.3	26.3	7.35
1990/91*	1.04	2.90	2.82	5,529	156.1	187.2	—	6/ 91.7	70.9	162.6	24.6	6.70
1991/92*	0.65	2.86	2.75	5,617	154.5	185.0	—	6/ 94.8	60.0	154.8	30.2	7.45-7.85
1992/93*	—	**3.00	—	—	168.0	202.6	—	6/ 99.0	70.0	189.0	33.6	6.50-7.50
Corn												
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
1987/88	23.1	66.2	59.5	119.8	7,131	12,016	4,798	1,243	1,716	7,757	4,259	1.94
1988/89	20.5	67.7	58.3	84.6	4,929	9,191	3,941	1,293	2,028	7,260	1,930	2.54
1989/90	10.8	72.2	64.7	118.3	7,625	9,458	4,389	1,358	2,368	8,113	1,344	2.36
1990/91*	10.7	74.2	67.0	118.5	7,934	9,282	4,669	1,367	1,725	7,761	1,521	2.28
1991/92*	7.4	78.0	68.8	108.6	7,474	9,018	4,900	1,445	1,550	7,895	1,121	2.30-2.50
1992/93*	—	**79.0	—	—	8,575	9,706	5,000	1,485	1,550	8,035	1,871	1.90-2.30
Sorghum												
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
1987/88	4.1	11.8	10.5	68.4	731	1,474	555	25	232	812	663	1.70
1988/89	3.9	10.3	9.0	63.8	577	1,239	468	22	312	800	440	2.27
1989/90	3.3	12.6	11.1	65.4	615	1,055	518	15	303	835	220	2.10
1990/91*	3.3	10.5	9.1	63.1	573	793	405	14	232	851	143	2.12
1991/92*	2.3	11.0	9.8	66.0	579	722	355	15	245	815	107	2.20-2.40
1992/93*	—	**12.1	—	—	700	807	425	15	245	885	122	1.75-2.15
Barley												
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
1987/88	2.9	10.9	10.0	52.4	521	869	253	174	121	546	321	1.81
1988/89	2.8	9.8	7.6	38.0	280	622	171	175	79	425	198	2.80
1989/90	2.3	9.1	8.3	48.6	404	614	193	175	84	453	181	2.42
1990/91*	2.9	8.2	7.6	56.1	422	596	205	176	81	481	135	2.14
1991/92*	2.1	8.9	8.4	55.2	464	625	225	175	100	500	125	2.10
1992/93*	—	**8.3	—	—	420	565	185	175	90	450	115	1.85-2.25
Oats												
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
1987/88	0.6	17.9	6.9	54.3	374	552	358	81	1	440	112	1.58
1988/89	0.3	13.9	5.5	39.3	218	393	194	100	1	294	98	2.61
1989/90	0.4	12.1	6.9	54.3	374	538	268	115	1	381	157	1.49
1990/91*	0.2	10.4	5.9	60.1	358	678	286	120	1	407	171	1.14
1991/92*	0.6	8.7	4.8	60.6	243	484	245	125	1	371	113	1.20
1992/93*	—	**8.3	—	—	275	453	210	130	1	341	113	1.05-1.45
Soybeans												
	Mil. acres		Bu./acre					Mil. bu.				\$/bu.
1987/88	0	58.2	57.2	33.9	1,938	2,375	7/ 97	1,174	802	2,073	302	5.88
1988/89	0	58.8	57.4	27.0	1,549	1,855	7/ 88	1,058	527	1,673	182	7.42
1989/90	0	60.8	59.5	32.3	1,924	2,109	7/ 101	1,146	623	1,870	239	5.69
1990/91*	0	57.8	56.5	34.0	1,926	2,167	7/ 94	1,187	557	1,838	329	5.74
1991/92*	0	59.1	58.0	34.3	1,988	2,320	7/ 95	1,240	690	2,025	295	5.60
1992/93*	—	**57.4	—	—	1,915	2,215	7/ 95	1,235	850	1,980	235	6.00-6.50
Soybean oil												
								Mil. lbs.				\$/ Cts./lb.
1987/88	—	—	—	—	12,974	14,895	—	10,930	1,873	12,803	2,092	22.67
1988/89	—	—	—	—	11,737	13,987	—	10,591	1,661	12,252	1,715	21.10
1989/90	—	—	—	—	13,004	14,741	—	12,063	1,353	13,436	1,305	22.30
1990/91*	—	—	—	—	13,408	14,730	—	12,164	780	12,944	1,786	21.00
1991/92*	—	—	—	—	14,080	15,876	—	12,250	1,425	13,675	2,200	19.0
1992/93*	—	—	—	—	14,080	16,285	—	12,450	1,400	13,850	2,435	17.0-21.0
Soybean meal												
								1,000 tons				\$/ \$/ton
1987/88	—	—	—	—	28,080	28,300	—	21,293	6,854	28,147	153	222
1988/89	—	—	—	—	24,943	25,100	—	19,657	5,270	24,927	173	233
1989/90	—	—	—	—	27,719	27,900	—	22,263	5,319	27,582	318	174
1990/91*	—	—	—	—	28,325	28,666	—	22,912	5,469	28,381	285	170
1991/92*	—	—	—	—	29,360	29,650	—	23,000	6,350	29,350	300	175
1992/93*	—	—	—	—	29,345	29,650	—	23,200	6,150	29,350	300	165-195

See footnotes at end of table.



Table 17.—Supply &amp; Utilization, continued

	Area			Yield	Production	Total supply 4/	Feed and residual	Other domestic use	Exports	Total use	Ending Stocks	Farm price 5/
	Set Aside 3/	Planted	Harvested									
	Mil. acres			Lb./acre		Mil. bales						
Cotton 10/												
1987/88	4.0	10.4	10.0	706	14.8	19.8	—	7.6	8.6	14.2	5.8	64.30
1988/89	2.2	12.5	11.9	619	15.4	21.2	—	7.8	8.1	13.9	7.1	56.90
1989/90	3.5	10.6	9.5	614	12.2	19.3	—	8.6	7.7	16.5	3.0	66.20
1990/91*	2.0	12.3	11.7	614	15.5	18.5	—	8.7	7.8	16.5	2.3	66.20
1991/92*	0.9	14.1	13.0	652	17.6	20.0	—	9.4	8.8	16.2	3.9	11/ 58.3
1992/93*	—	**13.5	—	—	17.2	21.1	—	9.5	7.0	16.5	4.8	—

\* May 11, 1992 Supply & Demand Estimates. 1/ Marketing year beginning June 1 for wheat, barley, & oats; August 1 for cotton & rice; September 1 for soybeans, corn, & sorghum; October 1 for soybean meal & soybean oil. 2/ Conversion factors: Hectare (ha.) = 2.471 acres, 1 metric ton = 2204.622 pounds, 36,7437 bushels of wheat or soybeans, 39,3679 bushels of corn or sorghum, 45,9296 bushels of barley, 66,8944 bushels of oats, 22,046 cwt of rice, & 4.59 480-pound bales of cotton. 3/ Includes diversion, acreage reduction, 50-92, & 0-92 programs. 0/92 & 50/92 set-aside includes idled acreage & acreage planted to minor oilseeds. Data for 1991/92 are preliminary. 4/ Includes imports. 5/ Marketing-year weighted average price received by farmers. Does not include an allowance for loans outstanding & Government purchases. 6/ Residual included in domestic use. 7/ Includes seed. 8/ Simple average of crude soybean oil, Decatur. 9/ Simple average of 44 percent. Decatur. 10/ Upland & extra long staple. Stocks estimates based on Census Bureau data, resulting in an unaccounted difference between supply & use estimates & changes in ending stocks. 11/ Weighted average for August-November; not a projection for the marketing year. — = not available or not applicable. \*\* Prospective plantings.

Information contact: Commodity Economics Division, Crops Branch (202) 219-0840.

Table 18.—Cash Prices, Selected U.S. Commodities

	Marketing year 1/				1991			1992		
	1987/88	1988/89	1989/90	1990/91	Mar	Nov	Dec	Jan	Feb	Mar <sup>2/</sup>
Wheat, No. 1 HRW, Kansas City (\$/bu.) 2/	2.96	4.17	4.22	2.94	2.94	3.78	4.06	4.66	4.51	4.33
Wheat, DNS, Minneapolis (\$/bu.) 3/	3.15	4.38	4.16	3.08	3.00	3.78	4.11	4.36	4.56	4.36
Rice, S.W. La. (\$/cwt) 4/	19.25	14.85	15.55	15.25	15.75	17.10	17.30	17.30	17.30	16.60
Corn, no. 2 yellow, 30 day, Chicago (\$/bu.)	2.14	2.68	2.54	2.40	2.52	2.46	2.50	2.59	2.67	2.72
Sorghum, no. 2 yellow, Kansas City (\$/cwt)	3.40	4.17	4.21	4.08	4.35	4.27	4.35	4.44	4.82	4.78
Barley, feed, Duluth (\$/bu.) 5/	1.78	2.32	2.20	2.13	2.14	2.23	2.18	2.20	2.28	2.30
Barley, malting, Minneapolis (\$/bu.)	2.04	4.11	3.28	2.42	2.46	2.50	2.54	2.51	2.51	2.50
U.S. price, \$/Lb. 1-1/16 in. (cts./lb.) 6/	63.1	67.7	69.8	74.8	77.9	64.7	63.9	61.5	50.8	52.0
Northern Europe prices index (cts./lb.) 7/	72.3	66.4	82.3	82.9	83.7	63.0	61.6	59.3	58.3	55.3
U.S. M 1-3/32 in. (cts./lb.) 8/	76.3	69.2	83.6	86.2	94.7	65.4	64.3	61.5	60.3	56.8
Soybeans, no. 1 yellow, 30 day, Chicago (\$/bu.)	6.67	7.41	5.88	5.76	5.78	5.56	5.54	5.66	5.73	5.88
Soybean oil, crude, Decatur (cts./lb.)	22.70	21.10	22.30	21.00	22.21	18.78	18.99	18.77	18.88	19.74
Soybean meal, 44% protein, Decatur (\$/ton)	221.90	233.50	173.75	189.78	165.75	178.00	170.70	172.70	174.30	174.20

1/ Beginning June 1 for wheat & barley; Aug. 1 for rice & cotton; Sept. 1 for corn, sorghum & soybeans; Oct. 1 for soybean meal & oil. 2/ Ordinary protein. 3/ 14% protein. 4/ Long grain, milled basis. 5/ Beginning Mar. 1987 reporting point changed from Minneapolis to Duluth. 6/ Average spot market. 7/ Liverpool Cotton (A) index; average of five lowest prices of 12 selected growths. 8/ Memphis territory growths.

Information contacts: Wheat & feed grains, Joy Harwood (202) 219-0840; Cotton, Les Meyer (202) 219-0840; Soybeans, Brenda Toland, (202) 219-0840.

Table 19.—Farm Programs, Price Supports, Participation & Payment Rates<sup>1</sup>

	Target price	Basic loan rate	Findley or announced loan rate 1/	Payment rates			Effective base acres 2/	Program 3/	Participation rate 4/
				Total deficiency	Paid land diversion				
					Mandatory	Optional			
				\$/bu.			Mill. acres	Percent of base	Percent of base
Wheat									
1986/87 5/	4.38	3.00	2.40	1.98	1.10	2.00	91.6	22.5/2.5/5-10	85
1987/88	4.38	2.85	2.28	1.81	—	—	87.6	27.5/0/0	88
1988/89	4.23	2.78	2.21	0.89	—	—	84.8	27.5/0/0	88
1989/90	4.10	2.58	2.08	0.32	—	—	82.3	10/0/0	78
1990/91 6/	4.00	2.44	1.95	1.28	—	—	80.5	7/ 5/0/0	83
1991/92	4.00	2.52	2.04	1.35	—	—	79.3	15/0/0	85
1992/93	4.00	2.58	2.21	**0.65	—	—	—	5/0/0	—
Rice									
1986/87 5/	11.90	7.20	8/ 3.94	4.70	—	—	4.2	35/0/0	94
1987/88	11.66	6.84	8/ 5.79	4.82	—	—	4.2	35/0/0	96
1988/89	11.15	6.63	8/ 6.21	4.31	—	—	4.2	25/0/0	94
1989/90	10.80	6.50	8/ 5.71	3.58	—	—	4.2	25/0/0	94
1990/91 6/	10.71	6.50	8/ 5.08	4.21	—	—	4.2	20/0/0	95
1991/92	10.71	6.50	—	3.07	—	—	4.2	5/0/0	95
1992/93	10.71	6.50	—	**3.51	—	—	—	0/0/0	—
Corn									
1986/87 5/	3.03	2.40	1.92	1.11	0.73	—	81.7	17.5/2.5/0	86
1987/88	3.03	2.28	1.82	1.09	—	2.00	81.6	20/0/15	91
1988/89	2.93	2.21	1.77	0.36	—	1.75	82.9	20/0/10	87
1989/90	2.84	2.06	1.65	0.68	—	—	82.7	10/0/0	80
1990/91 5/	2.75	1.98	1.57	0.53	—	—	82.6	10/0/0	77
1991/92	2.75	1.89	1.62	*0.41	—	—	82.9	7.5/0/0	77
1992/93	2.75	2.01	1.72	*0.48	—	—	—	5/0/0	—
Sorghum									
1986/87 5/	2.88	2.28	1.82	1.06	0.65	—	19.0 9/	17.5/2.5/0	74
1987/88	2.88	2.17	1.74	1.14	—	1.90	17.4	20/0/15	85
1988/89	2.78	2.10	1.68	0.48	—	1.65	16.8	20/0/10	82
1989/90	2.70	1.96	1.57	0.66	—	—	16.2	10/0/0	71
1990/91 6/	2.61	1.86	1.49	0.68	—	—	15.4	10/0/0	70
1991/92	2.61	1.80	1.54	*0.37	—	—	13.5	7.5/0/0	77
1992/93	2.61	1.91	1.63	*0.46	—	—	—	5/0/0	—
Barley									
1986/87 5/	2.80	1.95	1.58	0.99	0.67	—	12.4 9/	17.5/2.5/0	72
1987/88	2.80	1.86	1.49	0.79	—	1.60	12.5	20/0/15	85
1988/89	2.61	1.80	1.44	0.00	—	1.40	12.4	20/0/10	79
1989/90	2.43	1.68	1.34	0.00	—	—	12.3	10/0/0	87
1990/91 6/	2.36	1.60	1.28	0.22	—	—	11.9	10/0/0	68
1991/92	2.36	1.54	1.32	*0.62	—	—	11.5	7.5/0/0	76
1992/93	2.36	1.64	1.40	*0.35	—	—	—	5/0/0	—
Oats									
1986/87 6/	1.80	1.23	0.99	0.39	0.38	—	9.2 9/	17.5/2.5/0	38
1987/88	1.80	1.17	0.94	0.20	—	0.80	8.4	20/0/15	45
1988/89	1.55	1.14	0.90	0.00	—	—	7.9	5/0/0	30
1989/90	1.50	1.06	0.85	0.00	—	—	7.6	5/0/0	18
1990/91 6/	1.45	1.01	0.81	0.33	—	—	7.5	5/0/0	09
1991/92	1.45	0.97	0.83	*0.35	—	—	7.3	0/0/0	38
1992/93	1.45	1.03	0.88	*0.15	—	—	—	0/0/0	—
Soybeans 10/									
1986/87 5/	—	—	4.77	—	—	—	—	—	—
1987/88	—	—	4.77	—	—	—	—	—	—
1988/89	—	—	4.77	—	—	—	—	—	—
1989/90	—	—	4.53	—	—	—	—	11/ 10/25	—
1990/91 6/	—	—	4.50	—	—	—	—	11/ 0/25	—
1991/92	—	—	5.02	—	—	—	—	11/ 0/25	—
1992/93	—	—	5.02	—	—	—	—	11/ 0/25	—
Upland cotton									
1986/87 5/	81.0	55.00	12/ 44.00	26.00	—	—	13.8	25/0/0	92
1987/88	79.4	52.25	13/ 80.00	17.3	—	—	14.5	25/0/0	93
1988/89	75.9	51.80	13/ 51.89	19.4	—	—	14.5	12.5/0/0	89
1989/90	73.4	50.00	13/ 65.05	13.1	—	—	14.6	25/0/0	89
1990/91 6/	72.9	50.27	13/ 53.00	7.3	—	—	14.4	12.5/0/0	86
1991/92 14/	72.9	50.77	13/ —	10.1	—	—	14.6	5/0/0	84
1992/93	72.9	52.35	13/ —	**15.0	—	—	—	10/0/0	—

1/ There are no Findley loan rates for rice or cotton. See footnotes 6/, 12/, & 13/. 2/ National effective crop acreage base as determined by ASCS. Net of CRP. 3/ Program requirements for participating producers (mandatory acreage reduction program/mandatory paid land diversion/optional paid land diversion). Acres idled must be devoted to a conserving use to receive program benefits. 4/ Percentage of effective base acres enrolled in acreage reduction programs. 5/ Payments & loans received in cash were reduced by 4.3 percent in 1986/87 due to Gramm-Rudman-Hollings. 6/ Payments & loans were reduced by 1.4 percent in 1990/91 due to Gramm-Rudman-Hollings. Budget Reconciliation Act reductions to deficiency payments rates were also in effect in that year. Data do not include these reductions. 7/ Under 1990 modified contracts, participating producers plant up to 105 percent of their wheat base acres. For every acre planted above 95 percent of base, the acreage used to compute deficiency payments was cut by 1 acre. 8/ A marketing loan has been in effect for rice since 1985/86. Loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly). However, loans cannot be repaid at less than a specified fraction of the loan rate. Data refer to annual average adjusted world prices. 9/ The sorghum, oats, & barley programs are the same as for corn except as indicated. 10/ There are no target prices, base acres, acreage reduction programs, or deficiency payment rates for soybeans. 11/ Nominal percentage of program crop base acres permitted to shift into soybeans without loss of base. 12/ A marketing loan has been in effect for cotton since 1986/87. The loan repayment rate was fixed at 80 percent of the loan rate in 1986/87 (Plan A). 13/ In 1987/88 & after, loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly; Plan B). Starting in 1991/92, loans cannot be repaid at less than 70 percent of the loan rate. Data refer to annual average adjusted world prices. 14/ A marketing certificate program was implemented on Aug. 1, 1991. — = not available.

\* For wheat & feed grains, the 1991/92 rate is the regular (5-month) deficiency payment rate. For the winter wheat option, the 5-month rate is \$1.25. For upland cotton & rice, the rate is the total payment rate. \*\* Estimated total deficiency payment rate. Minimum guaranteed payment rate for 0/92 (wheat & feed grains) & 50/92 (rice & upland cotton) programs.

Information contact: Joy Harwood (202) 219-0840.

Table 20.—Fruit

	1983	1984	1985	1986	1987	1988	1989	1990	1991 P
<b>Citrus 1/</b>									
Production (1,000 ton)	13,682	10,832	10,525	11,058	11,993	12,781	13,186	10,860	12,218
Per capita consumpt. (lbs.) 2/	29.5	24.0	22.6	28.0	25.8	26.4	25.4	22.4	—
<b>Noncitrus 3/</b>									
Production (1,000 tons)	14,168	14,301	14,191	13,874	16,011	15,893	18,365	15,655	15,504
Per capita consumpt. (lbs.) 2/	63.8	67.7	66.7	69.8	75.4	72.7	74.3	69.8	—
	1991					1992			
<b>F.o.b. shipping point prices</b>	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Apples (\$/carton) 4/	14.00	14.00	19.20	14.00	14.00	14.00	13.73	21.13	15.00
Pears (\$/box) 5/	—	—	13.00	13.00	13.00	13.00	12.50	21.25	13.50
<b>Grower prices</b>									
Oranges (\$/box) 6/	19.48	20.81	21.97	11.09	5.19	5.31	5.93	6.90	6.04
Grapefruit (\$/box) 6/	4.82	2.86	1.38	6.24	6.16	5.95	5.92	5.68	7.11
<b>Stocks, ending</b>									
Fresh apples (mil. lbs.)	163.0	17.7	2,723.8	5,133.7	4,461.6	3,703.6	2,952.9	2,315.4	1,623.2
Fresh pears (mil. lbs.)	12.8	137.5	456.3	420.8	335.4	217.2	161.5	152.7	93.6
Frozen fruits (mil. lbs.)	762.6	833.2	871.6	1,027.9	983.4	892.4	803.8	741.8	636.2
Frozen orange juice (mil. lbs.)	967.7	876.9	765.2	584.2	617.3	952.7	1,130.7	1,149.7	1,102.0

1/ 1991 indicated 1990/91 season. 2/ Fresh per capita consumption. 3/ Calendar year. 4/ Red delicious, Washington, extra fancy, carton tray pack, 125's. 5/ D'Anjou, Washington, standard box wrapped, U.S. no. 1, 135's. 6/ U.S. equivalent on-tree returns. P = preliminary. — = not available.

Information contact: Wynne Napper (202) 219-0884.

Table 21.—Vegetables

	Calendar year									
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Production</b>										
Total vegetables (1,000 cwt)	430,795	403,508	456,334	453,030	448,629	476,381	488,779	542,437	561,704	565,373
Fresh (1,000 cwt) 1/ 3/	193,451	185,782	201,817	203,549	203,166	220,539	228,397	239,281	239,104	230,301
Processed (tons) 2/ 3/	11,867,170	10,886,350	12,725,880	12,474,040	12,273,200	12,892,100	12,019,110	15,157,790	16,130,020	16,753,580
Mushrooms (1,000 lbs.) 4/	490,828	661,531	595,681	587,956	614,393	631,819	667,759	714,992	749,488	—
Potatoes (1,000 cwt)	355,131	333,726	362,039	406,609	361,743	389,320	356,438	370,444	402,110	418,229
Sweetpotatoes (1,000 cwt)	14,833	12,083	12,902	14,573	12,368	11,611	10,945	11,358	12,594	11,496
Dry edible beans (1,000 cwt)	25,683	15,520	21,070	22,298	22,960	26,031	19,253	23,729	32,370	32,963
	1991					1992				
<b>Shipments</b>	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Fresh (1,000 cwt) 5/	26,747	29,105	17,211	15,711	20,930	17,354	16,583	22,759	17,429	17,527
Potatoes (1,000 cwt)	10,395	10,720	8,796	9,541	13,069	12,277	11,386	14,747	12,213	14,325
Sweetpotatoes (1,000 cwt)	188	151	93	220	403	820	433	301	295	247

1/ Includes fresh production of asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, honeydews, onions, & tomatoes. 2/ Includes processing production of snap beans, sweet corn, green peas, tomatoes, cucumbers (for pickles), asparagus, broccoli, carrots, & cauliflower. 3/ Asparagus & cucumber estimates were not available for 1982 & 1983. 4/ Fresh & processing agaricus mushrooms only. Excludes specialty varieties. Crop year July 1 - June 30. 5/ Includes snap beans, broccoli, cabbage, carrots, cauliflower, celery, sweet corn, cucumbers, eggplant, lettuce, onions, bell peppers, squash, tomatoes, cantaloupes, honeydews, & watermelons.

Information contacts: Gary Lucier or Cathy Greene (202) 219-0884.

Table 22.—Other Commodities

	Annual					1990		1991		
	1987	1988	1989	1990	1991	Oct-Dec	Jan-Mar	Apr-June	July-Sept	Oct-Dec
<b>Sugar</b>										
Production 1/	7,309	7,087	6,841	8,335	—	3,435	2,206	626	648	—
Deliveries 1/	8,167	8,188	8,340	8,661	—	2,311	2,019	2,103	2,340	—
Stocks, ending 1/	3,195	3,132	2,948	2,642	—	2,729	3,530	2,487	1,513	—
<b>Coffee</b>										
Composite green price N.Y. (cts./lb.)	109.14	119.59	95.17	76.93	70.09	76.85	74.94	72.13	68.18	64.84
Imports, green bean equiv. (mil. lbs.) 2/	2,838	2,072	2,630	2,714	2,572	616	748	563	562	699
	Annual			1990	1991					
	1988	1989	1990	Sept	Apr	May	June	July	Aug	Sept
<b>Tobacco</b>										
Prices at auctions 3/										
Flue-cured (\$/lb.)	1.61	1.67	1.67	1.74	—	—	—	—	1.66	1.77
Burley (\$/lb.)	1.61	1.67	1.75	—	—	—	—	—	—	—
Domestic consumption 4/										
Cigarettes (bil.)	562.5	540.1	523.1	43.3	40.1	49.3	45.8	44.0	42.3	43.4
Large cigars (mil.)	2,531	2,467.6	2,343.4	195.5	175.4	169.1	218.8	170.2	205.8	183.4

1/ 1,000 short tons, raw value. Quarterly data shown at end of each quarter. 2/ Net imports of green & processed coffee. 3/ Crop year July-June for flue-cured, Oct.-Sept. for burley. 4/ Taxable removals. — = not available.

Information contacts: sugar, Peter Buzzanell (202) 219-0886, coffee, Fred Gray (202) 219-0888, tobacco, Verner Gries (202) 219-0890.



## World Agriculture

Table 23.—World Supply &amp; Utilization of Major Crops, Livestock &amp; Products

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 P	1992/93 F
	Million units						
<b>Wheat</b>							
Area (hectares)	228.2	219.9	217.5	225.8	231.8	222.1	548.6
Production (metric tons)	524.8	496.4	495.8	533.2	588.8	541.6	102.1
Exports (metric tons) 1/	90.7	107.8	97.2	97.0	94.2	107.3	550.2
Consumption (metric tons) 2/	518.6	525.6	626.1	530.3	567.0	554.6	128.2
Ending stocks (metric tons) 3/	177.6	148.4	118.0	120.9	142.7	129.8	
<b>Coarse grains</b>							
Area (hectares)	337.2	325.1	325.7	322.9	316.1	323.4	
Production (metric tons)	824.7	788.8	723.6	794.7	822.2	798.7	834.0
Exports (metric tons) 1/	83.7	83.9	96.2	102.1	88.0	90.1	86.3
Consumption (metric tons) 2/	798.8	807.2	787.9	820.4	809.1	805.7	819.5
Ending stocks (metric tons) 3/	234.0	213.6	149.3	123.7	136.8	129.8	144.3
<b>Rice, milled</b>							
Area (hectares)	145.4	141.9	145.6	146.7	147.0	146.1	
Production (metric tons)	318.1	318.1	331.8	344.1	352.3	348.4	352.3
Exports (metric tons) 4/	12.9	11.9	15.1	12.0	12.5	13.4	13.4
Consumption (metric tons) 2/	322.1	321.5	329.4	337.5	347.8	352.0	354.0
Ending stocks (metric tons) 3/	51.4	46.0	48.3	55.0	59.5	55.9	54.2
<b>Total grains</b>							
Area (hectares)	710.8	686.9	688.8	695.4	694.9	691.8	
Production (metric tons)	1,867.6	1,599.3	1,551.0	1,672.0	1,763.3	1,688.7	1,734.9
Exports (metric tons) 1/	187.3	203.4	208.5	211.1	194.7	210.8	201.8
Consumption (metric tons) 2/	1,637.5	1,654.3	1,643.4	1,688.2	1,723.9	1,712.3	1,723.7
Ending stocks (metric tons) 3/	463.0	408.0	315.6	299.6	339.0	315.5	326.7
<b>Oilseeds</b>							
Crush (metric tons)	161.8	168.5	166.4	173.4	178.8	184.3	
Production (metric tons)	194.9	210.6	204.2	214.3	217.8	223.9	223.0
Exports (metric tons)	37.7	39.5	32.0	36.0	33.7	36.1	
Ending stocks (metric tons)	23.3	24.0	22.2	23.3	23.3	23.4	
<b>Meats</b>							
Production (metric tons)	110.7	115.4	112.2	118.0	120.9	124.3	
Exports (metric tons)	36.7	35.8	37.9	39.1	39.7	40.4	
<b>Oils</b>							
Production (metric tons)	50.4	53.3	53.9	57.7	59.0	60.5	
Exports (metric tons)	16.9	17.5	18.3	20.0	20.3	20.1	
<b>Cotton</b>							
Area (hectares)	29.5	31.0	33.7	31.6	33.0	34.3	
Production (bales)	70.7	81.2	84.6	79.9	87.0	95.2	94.0
Exports (bales)	26.0	23.2	25.9	24.0	23.0	23.0	24.0
Consumption (bales)	82.8	84.1	85.2	86.6	85.6	85.7	89.0
Ending stocks (bales)	35.9	33.0	32.2	26.4	28.7	38.2	43.1
	1986	1987	1988	1989	1990	1991 P	1992 F
<b>Red meat</b>							
Production (metric tons)	109.8	112.8	116.5	117.9	120.0	119.1	118.8
Consumption (metric tons)	108.6	110.8	114.5	116.5	117.8	117.1	117.4
Exports (metric tons) 1/	6.6	6.7	7.1	7.2	7.3	7.7	7.7
<b>Poultry 5/</b>							
Production (metric tons)	30.2	31.4	33.1	34.3	36.2	37.7	39.3
Consumption (metric tons)	29.9	31.0	32.7	33.9	35.8	37.1	38.8
Exports (metric tons) 1/	1.3	1.5	1.7	1.8	2.1	2.2	2.3
<b>Dairy</b>							
Milk production (metric tons)	425.9	425.7	429.0	434.9	442.6	426.8	425.8

1/ Excludes intra-EC trade. 2/ Where stocks data not available (excluding USSR), consumption includes stock changes. 3/ Stocks data are based on differing marketing years & do not represent levels at a given date. Data not available for all countries; includes estimated change in USSR grain stocks but not absolute level. 4/ Calendar year data. 1987 data correspond with 1986/87, etc. 5/ Poultry excludes the Peoples Republic of China before 1988. P = preliminary. F = forecast.

Information contacts: Crops, Carol Whitton (202) 219-0824; red meat & poultry, Linda Bailey (202) 219-1285; dairy, Sara Short (202) 219-0770.

## U.S. Agricultural Trade

**Table 24.—Prices of Principal U.S. Agricultural Trade Products**

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
<b>Export commodities</b>										
Wheat, f.o.b. vessel, Gulf ports (\$/bu.)	4.65	3.72	3.52	3.28	4.00	4.09	4.40	4.65	4.83	4.63
Corn, f.o.b. vessel, Gulf ports (\$/bu.)	2.85	2.79	2.75	2.79	2.79	2.74	2.73	2.79	2.91	2.97
Grain sorghum, f.o.b. vessel, Gulf ports (\$/bu.)	2.70	2.65	2.69	2.80	2.74	2.70	2.76	2.86	2.88	3.06
Soybeans, f.o.b. vessel, Gulf ports (\$/bu.)	7.06	6.24	6.05	6.14	5.99	5.97	5.91	6.00	6.06	6.19
Soybean oil, Decatur (cts./lb.)	20.21	22.75	20.14	22.20	19.06	16.52	16.67	18.61	18.65	19.58
Soybean meal, Decatur (\$/ton)	216.59	169.37	172.90	165.70	181.83	178.38	171.38	172.43	173.86	174.89
Cotton, 8—market avg. spot (cts./lb.)	63.78	71.25	69.69	77.92	58.28	54.70	53.89	61.53	50.76	52.01
Tobacco, avg. price at auction (cts./lb.)	161.74	166.06	173.53	170.89	178.02	181.93	179.98	175.95	174.92	172.50
Rice, f.o.b. mill, Houston (\$/cwt)	15.68	15.52	16.46	16.00	16.50	17.00	17.50	17.50	17.50	17.50
Inedible tallow, Chicago (cts./lb.)	14.71	13.54	13.26	13.63	13.68	13.21	12.50	0	12.63	12.45
<b>Import commodities</b>										
Coffee, N.Y. spot (\$/lb.)	1.04	0.81	0.71	0.82	0.61	0.59	0.57	0.57	0.51	0.53
Rubber, N.Y. spot (cts./lb.)	50.65	46.28	45.73	49.09	44.54	44.75	44.15	43.11	43.85	44.51
Cocoa beans, N.Y. (\$/lb.)	0.55	0.55	0.52	0.53	0.58	0.57	0.59	0.56	0.51	0.49

Information contact: Mary Teymourian (202) 219-0824.

**Table 25.—Indexes of Real Trade-Weighted Dollar Exchange Rates <sup>1/</sup>**

	1991							1992			
	June	July	Aug	Sept	Oct	Nov P	Dec P	Jan P	Feb P	Mar P	Apr P
	1985 = 100										
<b>Total U.S. trade <sup>2/</sup></b>	69.3	69.1	68.2	66.6	66.0	63.9	62.4	62.3	63.7	65.6	65.5
<b>Agricultural trade</b>											
U.S. markets	80.8	80.5	79.8	78.4	78.3	77.1	76.2	75.5	76.2	77.7	77.6
U.S. competitors	77.9	77.8	76.9	75.8	77.0	76.3	76.3	76.1	76.7	77.0	77.1
<b>Wheat</b>											
U.S. markets	98.6	98.9	98.1	96.3	97.4	96.8	96.3	95.1	96.2	97.1	97.3
U.S. competitors	72.1	71.9	71.1	70.3	69.9	69.4	69.6	70.1	71.2	71.5	71.7
<b>Soybeans</b>											
U.S. markets	70.2	69.7	68.8	67.4	66.7	65.0	63.8	63.2	63.9	65.9	65.7
U.S. competitors	56.8	55.6	54.8	54.1	56.0	56.4	57.7	57.4	57.6	57.9	58.6
<b>Corn</b>											
U.S. markets	74.6	74.1	73.7	72.3	71.3	70.2	69.5	68.4	69.3	70.8	70.6
U.S. competitors	65.7	65.1	64.3	62.8	62.5	61.4	60.4	59.9	60.6	61.0	60.7
<b>Cotton</b>											
U.S. markets	75.6	75.6	75.2	74.1	73.6	72.7	72.2	71.7	72.4	73.9	73.9
U.S. competitors	89.4	88.8	88.4	86.8	86.8	87.4	87.0	95.5	95.8	95.9	95.9

<sup>1/</sup> Real indexes adjust nominal exchange rates for differences in rates of inflation, to avoid the distortion caused by high-inflation countries. A higher value means the dollar has appreciated. See the October 1988 issue of Agricultural Outlook for a discussion of the calculations and the weights used. <sup>2/</sup> Federal Reserve Board index of trade-weighted value of the U.S. dollar against 10 major currencies. Weights are based on relative importance in world financial markets. P = preliminary.

Information contact: Tim Baxter, David Stallings (202) 219-0718.

**Table 26.—Trade Balance**

	Fiscal year <sup>1/</sup>								Feb
	1985	1986	1987	1988	1989	1990	1991	1992 F	1992
	\$ million								
<b>Exports</b>									
Agricultural	31,201	26,312	27,878	35,316	39,590	40,220	37,609	40,000	3,859
Nonagricultural	179,236	179,291	202,911	258,656	301,269	328,059	356,682	—	31,142
<b>Total <sup>2/</sup></b>	210,437	205,603	230,787	293,972	340,859	366,279	394,291	—	35,001
<b>Imports</b>									
Agricultural	19,740	20,884	20,650	21,014	21,476	22,560	22,588	22,000	1,938
Nonagricultural	313,722	342,846	367,374	409,138	441,075	458,101	463,720	—	36,359
<b>Total <sup>3/</sup></b>	333,462	363,730	388,024	430,152	462,551	480,661	486,308	—	38,297
<b>Trade balance</b>									
Agricultural	11,461	5,426	7,228	14,302	18,114	17,660	15,021	18,000	1,921
Nonagricultural	-134,486	-163,555	-164,463	-150,482	-139,806	-132,042	-107,038	—	-5,217
<b>Total</b>	-123,025	-158,127	-157,237	-136,180	-121,692	-114,382	-92,017	—	-3,296

<sup>1/</sup> Fiscal years begin October 1 & end September 30. Fiscal year 1991 began Oct. 1, 1990 & ended Sept. 30, 1991. <sup>2/</sup> Domestic exports including Department of Defense shipments (F.A.S. value). <sup>3/</sup> Imports for consumption (customs value). F = forecast — = not available.

Information contact: Stephen MacDonald (202) 219-0822.

Table 27.—U.S. Agricultural Exports &amp; Imports

	Fiscal year*			Feb	Fiscal year*			Feb
	1990	1991	1992 F	1992	1990	1991	1992 F	1992
EXPORTS	1,000 units				\$ million			
Animals, live (no.) 1/	685	1,235	—	107	381	546	—	38
Meats & preps., excl. poultry (mt)	873	937	2/ 900	94	2,457	2,774	—	274
Dairy products (mt) 1/	105	43	—	19	358	293	600	58
Poultry meats (mt)	563	628	700	57	679	737	—	68
Fats, oils, & greases (mt)	1,265	1,189	1,200	81	459	419	—	29
Hides & skins incl. furskins	—	—	—	—	1,794	1,453	—	114
Cattle hides, whole (no.) 1/	23,920	21,608	—	1,462	1,412	1,193	—	81
Mink pelts (no.) 1/	5,128	3,941	—	722	116	74	—	14
Grains & feeds (mt)	112,925	100,016	—	9,045	15,698	12,206	3/ 13,300	1,243
Wheat (mt)	28,068	26,708	33,000	3,133	4,212	2,857	4/ 4,300	397
Wheat flour (mt)	851	1,076	900	108	198	202	—	19
Rice (mt)	2,491	2,401	2,100	131	830	749	700	47
Feed grains, incl. products (mt)	69,384	52,337	45,900	4,548	8,094	5,789	5,300	529
Feeds & fodders (mt)	11,153	16,389	5/ 11,500	998	1,828	1,914	—	181
Other grain products (mt)	978	1,105	—	127	536	695	—	70
Fruits, nuts, & preps. (mt)	2,972	2,649	—	297	2,788	3,038	—	287
Fruit juices incl.								
froz. (1,000 hectoliters) 1/	5,975	6,310	—	560	328	338	—	32
Vegetables & preps. (mt)	2,243	2,589	—	208	2,079	2,597	—	234
Tobacco, unmanufactured (mt)	218	239	200	21	1,359	1,533	1,500	122
Cotton, excl. linters (mt)	1,668	1,565	1,600	184	2,704	2,605	2,400	240
Seeds (mt)	556	514	—	129	573	618	600	76
Sugar, cane or beet (mt)	447	589	—	29	187	219	—	10
Oilseeds & products (mt)	23,745	21,976	—	3,320	6,099	5,607	6,600	805
Oilseeds (mt)	17,669	15,633	—	2,517	4,239	3,811	—	576
Soybeans (mt)	17,229	15,139	18,100	2,465	3,942	3,465	4,000	548
Protein meal (mt)	4,780	5,292	—	636	1,032	1,073	—	131
Vegetable oils (mt)	1,296	1,051	—	167	829	723	—	98
Essential oils (mt)	14	13	—	1	182	183	—	18
Other	91	92	—	9	2,115	2,441	—	210
Total	147,583	133,219	134,500	13,474	40,220	37,609	40,000	3,859
IMPORTS								
Animals, live (no.) 1/	2,938	3,168	—	225	1,053	1,131	1,100	112
Meats & preps., excl. poultry (mt)	1,142	1,191	—	87	2,848	3,016	—	204
Beef & veal (mt)	754	811	722	62	1,842	2,024	1,800	148
Pork (mt)	340	322	340	21	888	866	800	47
Dairy products (mt) 1/	255	231	—	13	951	807	800	50
Poultry & products 1/	—	—	—	—	129	119	—	11
Fats, oils, & greases (mt)	19	33	—	3	15	19	—	2
Hides & skins, incl. furskins 1/	—	—	—	—	182	153	—	21
Wool, unmanufactured (mt)	47	50	—	5	187	175	—	15
Grains & feeds (mt)	3,481	4,163	4,650	465	1,181	1,271	1,200	111
Fruits, nuts, & preps., excl. juices (mt)	5,331	5,648	5,580	528	2,486	2,740	—	263
Bananas & plantains (mt)	3,238	3,397	3,400	282	926	992	1,000	85
Fruit juices (1,000 hectoliters) 1/	33,933	27,948	32,000	1,766	1,002	737	—	64
Vegetables & preps. (mt)	2,243	2,180	—	245	2,264	2,185	2,100	210
Tobacco, unmanufactured (mt)	183	215	220	22	588	698	700	80
Cotton, unmanufactured (mt)	30	18	—	1	20	16	—	1
Seeds (mt)	171	169	170	19	164	173	200	14
Nursery stock & cut flowers 1/	—	—	—	—	519	538	—	61
Sugar, cane or beet (mt)	1,769	1,785	—	140	734	717	—	51
Oilseeds & products (mt)	2,016	2,077	—	174	964	959	1,000	80
Oilseeds (mt)	534	445	—	34	208	151	—	11
Protein meal (mt)	310	412	—	49	48	57	—	6
Vegetable oils (mt)	1,171	1,220	—	91	710	750	—	63
Beverages excl. fruit juices (1,000 hectoliters) 1/	13,543	12,987	—	836	1,867	1,858	—	112
Coffee, tea, cocoa, spices	2,202	2,025	2,055	206	3,465	3,280	—	300
Coffee, incl. products (mt)	1,290	1,116	1,150	119	1,997	1,831	1,800	173
Cocoa beans & products (mt)	698	680	690	66	1,042	1,005	1,000	95
Rubber & allied gums (mt)	840	792	790	77	712	664	700	60
Other	—	—	—	—	1,229	1,332	—	115
Total	—	—	—	—	22,560	22,588	22,000	1,938

\* Fiscal years begin Oct. 1 & end Sept. 30. Fiscal year 1991 began Oct. 1, 1990 & ended Sept. 30, 1991. 1/ Not included in total volume and also other dairy products for 1989 & 1990. 2/ Forecasts for footnoted items 2/–6/ are based on slightly different groups of commodities. Fiscal 1990 exports of categories used in the 1991 forecasts were 2/ 676,000 m. tons. 3/ 16,014 million. 4/ 4,426 million i.e. includes flour. 5/ 11,065 million m. tons. 6/ Less than \$500. F = forecast. — = not available.

Information contact: Stephen MacDonald (202) 219-0822.



Table 28.—U.S. Agricultural Exports by Region

Region & country	Fiscal year*			Feb	Change from year* earlier			Feb
	1990	1991	1992 F	1992	1990	1991	1992 F	1992
	\$ million				Percent			
<b>WESTERN EUROPE</b>	7,309	7,312	7,400	838	4	0	1	10
European Community (EC-12)	6,815	6,776	6,900	789	4	-1	1	10
Belgium-Luxembourg	428	464	—	52	-1	9	—	43
France	469	571	—	62	-1	22	—	12
Germany	1,096	1,135	—	109	17	4	—	-6
Italy	702	675	—	92	15	-4	—	33
Netherlands	1,636	1,581	—	222	-11	-5	—	22
United Kingdom	760	883	—	79	3	16	—	21
Portugal	338	251	—	30	10	-25	—	0
Spain, incl. Canary Islands	976	855	—	90	15	-12	—	-24
Other Western Europe	493	538	500	49	-3	9	0	8
Switzerland	171	194	—	18	3	13	—	-13
<b>EASTERN EUROPE</b>	533	306	200	11	35	-43	-33	-71
Poland	101	48	—	8	124	-54	—	13
Yugoslavia	129	74	—	3	69	-43	—	-76
Romania	210	82	—	0	239	-61	—	-85
<b>USSR</b>	3,006	1,758	2,500	282	-9	-42	39	-5
<b>ASIA</b>	18,174	16,094	17,200	1,680	-3	-11	7	18
West Asia (Mideast)	1,996	1,430	1,600	170	-12	-28	14	72
Turkey	280	224	—	32	9	-14	—	134
Iraq	497	0	0	0	-37	-100	0	0
Israel, incl. Gaza & W. Bank	285	287	—	42	-14	1	—	107
Saudi Arabia	502	536	600	39	4	7	20	7
South Asia	723	375	—	73	-38	-48	—	373
Bangladesh	120	67	—	1	-44	-44	—	-75
India	116	95	—	15	-52	-18	—	166
Pakistan	391	144	200	50	-35	-63	-75	4,345
China	909	668	1,000	77	-39	-27	43	-19
Japan	8,155	7,736	8,000	786	0	-5	4	15
Southeast Asia	1,184	1,239	—	134	21	5	—	17
Indonesia	277	279	—	34	28	1	—	-1
Philippines	351	373	400	31	2	6	0	14
Other East Asia	5,206	4,646	4,800	440	13	-11	2	5
Taiwan	1,819	1,739	1,800	154	14	-4	6	3
Korea, Rep.	2,701	2,159	2,200	217	10	-20	0	5
Hong Kong	685	745	800	69	19	9	14	7
<b>AFRICA</b>	2,011	1,884	1,800	109	-12	-6	-5	-35
North Africa	1,527	1,388	1,300	82	-15	-9	-7	-38
Morocco	164	129	—	3	-24	-21	—	-31
Algeria	491	479	500	24	-11	-2	10	-56
Egypt	763	692	700	53	-20	-9	0	-15
Sub-Saharan	484	496	500	27	0	2	0	-33
Nigeria	32	44	—	1	7	37	—	73
Rep. S. Africa	81	74	—	2	43	-9	—	-62
<b>LATIN AMERICA &amp; CARIBBEAN</b>	5,155	5,500	5,700	556	-5	7	4	28
Brazil	105	271	200	5	-30	159	-33	-64
Caribbean Islands	1,008	1,010	—	84	0	0	—	10
Central America	463	497	—	48	3	7	—	55
Colombia	147	124	—	10	6	-16	—	25
Mexico	2,666	2,884	3,000	337	-3	8	3	29
Peru	187	150	—	14	132	-20	—	56
Venezuela	345	307	400	33	-41	-11	0	90
<b>CANADA</b>	3,715	4,409	4,700	354	70	19	7	7
<b>OCEANIA</b>	317	346	400	28	-18	9	0	-3
<b>TOTAL</b>	40,220	37,809	40,000	3,859	2	-6	6	11
Developed countries	19,805	20,104	20,400	2,044	10	2	1	12
Less developed countries	15,966	14,769	15,800	1,443	-3	-7	7	17
Centrally planned countries	4,448	2,736	3,800	371	-15	-38	41	-14

\*Fiscal years begin Oct. 1 & end Sept. 30. Fiscal year 1991 began Oct. 1, 1990 & ended Sept. 30, 1991. F = forecast. — = not available.  
 Note: Adjusted for transshipments through Canada.

Information contact: Stephen MacDonald (202) 219-0822.

## Farm Income

Table 29.—Farm Income Statistics

	Calendar year										
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 F	1992 F
	\$ billion										
1. Farm receipts	147.8	141.9	147.7	160.1	140.2	148.3	157.3	188.8	175.8	174	183 to 170
Crops (incl. net CCC loans)	72.3	67.2	69.9	74.3	63.7	65.8	71.8	78.8	80.4	81	81 to 85
Livestock	70.3	69.6	72.9	69.8	71.6	76.0	79.4	84.1	89.6	88	82 to 85
Farm related 1/	5.2	5.1	4.9	6.0	5.7	6.6	6.3	8.1	6.7	7	6 to 8
2. Direct Government payments	3.5	9.3	8.4	7.7	11.8	16.7	14.5	10.9	9.3	8	7 to 10
Cash payments	3.5	4.1	4.0	7.6	8.1	8.6	7.1	9.1	8.4	8	7 to 10
Value of P&K commodities	0.9	5.2	4.5	0.1	3.7	10.1	7.4	1.7	0.9	0	0 to 1
3. Gross cash income (1+2) 2/	151.3	151.1	156.1	167.9	152.3	165.1	171.9	179.9	188.0	182	178 to 188
4. Nonmoney income 3/	14.3	13.8	5.9	5.8	5.6	5.6	6.1	6.1	6.3	6	6 to 7
5. Value of inventory change	-1.4	-10.9	8.0	-2.3	-2.2	-2.3	-3.6	4.3	2.9	0	0 to 5
6. Total gross farm income (3+4+5)	164.1	153.9	168.0	161.2	160.1	168.4	174.6	190.3	195.1	188	186 to 194
7. Cash expenses 4/	113.2	112.8	118.7	110.7	105.0	109.8	114.6	120.5	124.2	125	125 to 132
8. Total expenses	140.3	139.6	141.9	132.4	125.1	128.7	133.9	140.2	144.3	146	146 to 154
9. Net cash income (4-7)	38.1	38.4	37.4	47.1	47.8	55.3	57.4	59.4	61.8	57	49 to 56
10. Net farm income (3-8)	23.8	14.2	26.1	28.8	31.0	39.7	40.6	60.1	60.8	42	37 to 43
Deflated (1987\$)	28.6	18.3	28.7	30.6	32.0	39.7	38.1	46.2	46.0	38	30 to 36
11. Off-farm income	38.4	37.0	39.2	55.2	54.6	56.3	57.2	57.3	67.0	60	59 to 82
12. Loan charges 5/ Real estate	3.0	1.4	3.5	-8.8	-9.8	-8.0	-4.8	-2.3	-1.9	-0	0 to 2
13.       5/ Non-real estate	3.4	0.9	-0.8	-9.6	-11.0	-4.6	-0.3	0.1	1.3	1	-1 to 1
14. Rental income plus monetary change	5.7	5.5	8.4	8.3	7.2	7.1	7.9	8.0	8.6	12	11 to 14
15. Capital expenditures 5/	13.3	12.7	12.6	9.2	8.5	11.2	11.3	12.6	13.4	13	11 to 14
16. Net cash flow (9+12+13+14-15)	37.0	33.4	38.0	30.1	25.9	38.7	49.0	52.6	58.4	66	60 to 55

1/ Income from machine hire, custom work, sales of forest products, & other miscellaneous cash sources. 2/ Numbers in parentheses indicate the combination of items required to calculate a given item. 3/ Value of home consumption of self-produced food & imputed gross rental value of farm dwellings. 4/ Excludes capital consumption, perquisites to hired labor, & farm household expenses. 5/ Excludes farm households. Total may not add because of rounding. F = forecast. — = not available.

Information contact: Robert McElroy (202) 219-0800.

Table 30.—Balance Sheet of the U.S. Farming Sector

	Calendar year 1/										
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 F	1992 F
	\$ billion										
<b>Assets</b>											
Real estate	750.0	753.4	681.7	588.1	542.2	678.8	599.4	605.1	614.4	624	625 to 635
Non-real estate	195.6	191.9	196.9	187.4	182.3	194.2	205.8	214.7	220.9	221	221 to 231
Livestock & poultry	53.0	49.5	49.5	48.3	47.8	58.0	62.2	66.2	69.1	68	68 to 72
Machinery & motor vehicles	86.0	85.8	85.0	82.9	81.5	80.0	82.0	85.8	87.4	89	88 to 92
Crops stored 2/	26.4	24.4	26.3	22.9	16.6	17.8	22.7	23.3	22.4	23	20 to 24
Purchased inputs	—	—	2.0	1.2	2.1	3.0	3.3	2.7	2.8	3	2 to 4
Financial assets	29.7	30.9	32.6	33.3	34.5	35.1	35.4	36.6	38.5	40	39 to 43
Total farm assets	945.1	944.0	857.1	772.6	724.6	772.5	805.1	819.7	834.6	845	850 to 860
<b>Liabilities</b>											
Real estate debt 3/	101.8	103.2	106.7	100.1	90.4	82.4	77.6	75.3	73.4	73	72 to 76
Non-real estate debt 4/	87.0	87.9	87.1	77.5	68.6	62.0	61.7	61.8	63.1	64	63 to 67
Total farm debt	188.8	191.1	193.8	177.6	157.0	144.4	139.4	137.1	136.5	137	136 to 142
Total farm equity	756.3	752.9	663.3	595.0	567.6	628.1	665.8	682.6	698.2	708	710 to 720
	Percent										
<b>Selected ratios</b>											
Debt-to-assets	20.0	20.2	22.6	23.0	21.7	18.7	17.3	18.7	16.3	16	16 to 17
Debt-to-equity	25.0	25.4	29.2	29.8	27.7	23.0	20.9	20.1	19.6	19	19 to 20
Debt-to-net cash income	496	498	518	377	328	261	243	231	221	235	240 to 280

1/ As of Dec. 31. 2/ Non-CCC crops held on farms plus value above loan rates for crops held under CCC. 3/ Excludes debt on operator dwellings, but includes CCC storage and drying facilities loans. 4/ Excludes debt for nonfarm purposes. F = forecast.

Information contacts: Ken Erickson or Jim Ryan (202) 219-0798.

Table 31.—Cash Receipts From Farm Marketings, by State

Region & State	Livestock & products				Crops 1/				Total 1/			
	1990	1991	Jan 1992	Feb 1992	1990	1991	Jan 1992	Feb 1992	1990	1991	Jan 1992	Feb 1992
	\$ million 2/											
<b>NORTH ATLANTIC</b>												
Maine	220	215	21	20	240	203	18	19	460	418	40	38
New Hampshire	63	63	6	6	71	70	6	6	134	133	12	12
Vermont	398	365	35	32	49	51	3	3	447	418	38	36
Massachusetts	116	116	11	10	303	337	27	13	418	453	37	23
Rhode Island	13	13	1	1	58	58	3	3	71	71	4	4
Connecticut	196	193	18	18	250	253	53	13	446	446	71	30
New York	1,983	1,766	157	145	1,023	1,067	64	60	3,006	2,833	221	205
New Jersey	196	199	17	16	452	464	20	18	647	663	37	34
Pennsylvania	2,714	2,478	198	203	1,053	1,009	92	83	3,767	3,487	289	286
<b>NORTH CENTRAL</b>												
Ohio	1,836	1,662	122	114	2,335	2,285	204	135	4,172	3,946	325	248
Indiana	2,060	1,892	137	134	2,871	2,596	208	196	4,931	4,488	345	330
Illinois	2,477	2,288	167	159	5,461	5,198	708	412	7,938	7,486	875	572
Michigan	1,398	1,277	108	101	1,785	1,787	174	125	3,183	3,064	282	226
Wisconsin	4,581	4,162	347	333	1,125	1,175	128	61	5,706	5,337	476	394
Minnesota	3,758	3,465	284	273	3,253	3,388	318	130	7,011	6,871	602	403
Iowa	5,882	5,502	436	379	4,437	4,539	558	323	10,319	10,040	994	702
Missouri	2,271	2,155	140	132	1,668	1,673	182	111	3,939	3,828	322	243
North Dakota	813	803	100	71	1,724	1,919	190	131	2,537	2,722	289	203
South Dakota	2,313	2,239	217	170	1,036	1,089	84	58	3,349	3,327	301	228
Nebraska	6,037	5,950	517	565	2,808	2,951	407	167	8,845	8,901	924	733
Kansas	4,896	4,731	488	441	2,099	2,123	284	163	6,995	6,854	772	604
<b>SOUTHERN</b>												
Delaware	460	431	40	33	184	175	7	9	644	605	47	42
Maryland	928	785	69	62	517	509	28	27	1,345	1,295	98	89
Virginia	1,379	1,352	104	101	741	726	48	29	2,120	2,078	153	129
West Virginia	269	267	19	17	70	74	6	4	338	342	25	20
North Carolina	2,653	2,544	169	176	2,214	2,272	76	59	4,867	4,816	245	235
South Carolina	577	558	44	40	599	674	35	25	1,176	1,231	79	66
Georgia	2,268	2,064	157	163	1,574	1,828	69	58	3,842	3,892	226	219
Florida	1,260	1,200	94	89	4,448	4,836	733	531	5,708	6,036	827	619
Kentucky	1,698	1,632	108	80	1,400	1,480	343	92	3,098	3,112	450	172
Tennessee	1,111	1,051	83	84	928	970	114	51	2,039	2,021	197	135
Alabama	2,083	2,010	149	140	655	753	54	28	2,737	2,763	203	168
Mississippi	1,322	1,291	92	89	1,111	1,191	153	55	2,433	2,482	245	144
Arkansas	2,708	2,575	202	174	1,553	1,836	158	87	4,259	4,410	380	261
Louisiana	637	617	40	41	1,284	1,261	148	57	1,921	1,879	188	98
Oklahoma	2,363	2,382	179	125	1,191	1,049	105	64	3,554	3,431	284	189
Texas	7,712	7,693	601	566	4,268	4,496	364	217	11,981	12,189	964	783
<b>WESTERN</b>												
Montana	864	854	95	72	742	746	114	66	1,606	1,600	208	139
Idaho	1,154	1,099	99	91	1,781	1,566	134	72	2,935	2,665	233	163
Wyoming	610	618	38	36	157	162	12	7	767	777	50	43
Colorado	3,029	2,906	253	237	1,184	1,099	99	65	4,213	4,005	352	302
New Mexico	1,048	1,026	95	55	483	477	23	17	1,529	1,503	118	72
Arizona	819	823	51	50	1,046	1,206	123	65	1,865	2,029	174	115
Utah	576	555	45	40	179	167	14	10	755	722	69	50
Nevada	218	218	19	20	115	93	6	6	333	311	25	26
Washington	1,396	1,318	109	107	2,420	2,698	241	200	3,816	4,016	350	307
Oregon	755	751	67	55	1,557	1,548	94	86	2,312	2,297	160	141
California	5,515	5,474	422	342	13,344	13,370	626	603	18,859	18,843	1,048	945
Alaska	8	8	1	1	19	19	1	1	27	27	2	2
Hawaii	58	69	7	7	499	489	42	37	558	578	49	45
<b>UNITED STATES</b>	<b>89,623</b>	<b>85,742</b>	<b>8,975</b>	<b>6,415</b>	<b>80,364</b>	<b>82,002</b>	<b>7,699</b>	<b>4,858</b>	<b>169,987</b>	<b>167,743</b>	<b>14,675</b>	<b>11,273</b>

1/ Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period. 2/ Estimates as of end of current month. Totals may not add because of rounding.

Information contact: Roger Strickland (202) 219-0806.



Table 32.—Cash Receipts From Farming

	Annual						1991				1992	
	1986	1987	1988	1989	1990	1991	Feb	Oct	Nov	Dec	Jan	Feb
	\$ million											
Farm marketings & CCC loans*	135,303	141,759	151,082	160,893	169,987	187,743	11,248	19,242	17,899	15,298	14,875	11,273
Livestock & products	71,553	75,994	79,437	84,131	89,623	85,742	8,609	8,102	7,438	7,605	6,975	6,415
Meat animals	39,081	44,478	48,492	48,857	51,677	50,325	4,048	5,052	4,285	4,328	4,096	3,758
Dairy products	17,724	17,727	17,841	19,398	20,199	18,321	1,346	1,617	1,586	1,810	1,814	1,495
Poultry & eggs	12,701	11,516	12,888	15,372	15,270	14,641	1,060	1,285	1,254	1,308	1,089	999
Other	2,048	2,274	2,436	2,507	2,477	2,455	156	168	313	163	198	163
Crops	63,749	65,764	71,845	78,781	80,364	82,002	4,839	11,140	10,481	7,894	7,699	4,858
Food grains	5,741	5,776	7,467	8,247	7,879	7,260	359	858	682	584	770	556
Feed crops	16,911	14,576	14,298	17,061	19,116	19,278	1,223	2,381	2,627	1,536	2,392	1,245
Cotton (lint & seed)	3,371	4,189	4,546	5,040	5,234	6,006	393	798	1,617	1,147	729	292
Tobacco	1,894	1,816	2,083	2,415	2,738	2,898	41	328	168	692	440	39
Oil-bearing crops	10,614	11,283	13,500	11,866	12,403	12,597	730	3,275	1,675	765	1,180	759
Vegetables & melons	8,865	9,902	9,787	11,461	11,633	11,789	583	1,204	552	467	785	687
Fruits & tree nuts	7,252	8,062	9,204	9,257	9,308	9,858	536	1,224	1,357	1,128	660	546
Other	9,101	10,181	10,780	11,415	12,160	12,308	774	1,071	1,762	1,373	764	754
Government payments	11,813	16,747	14,480	10,887	9,298	8,124	493	1,391	320	1,373	71	821
Total	147,116	158,506	165,562	171,780	179,285	175,867	11,741	20,633	18,219	16,671	14,746	12,094

\* Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period.

Information contact: Roger Strickland (202) 219-0806.

Table 33.—Farm Production Expenses

	Calendar year									
	1983	1984	1985	1986	1987	1988	1989	1990	1991 F	1992 F
	\$ million									
Feed purchased	20,673	19,383	18,949	17,472	17,463	20,393	21,002	20,727	20,000	18,000 to 22,000
Livestock purchased	8,818	9,487	9,184	9,758	11,842	12,764	13,138	14,737	14,000	12,000 to 15,000
Seed purchased	2,690	3,386	3,128	3,188	3,259	3,359	3,558	3,582	4,000	3,000 to 5,000
Farm-origin inputs	32,081	32,256	29,291	30,418	32,564	36,515	37,698	39,048	38,000	36,000 to 41,000
Fertilizer & lime	7,055	8,361	7,513	8,820	8,453	8,947	7,249	7,137	7,000	6,000 to 8,000
Fuels & oils	7,211	7,296	6,436	6,310	4,957	5,091	4,983	5,951	6,000	5,000 to 7,000
Electricity	1,982	2,060	1,878	1,795	2,158	2,278	1,990	1,944	2,000	1,000 to 3,000
Pesticides	3,670	4,888	4,334	4,324	4,512	4,577	5,437	5,727	6,000	5,000 to 7,000
Manufactured inputs	20,118	22,404	20,160	18,249	18,077	18,893	19,659	20,759	21,000	20,000 to 24,000
Short-term interest	10,816	10,396	8,735	7,367	8,767	8,797	6,910	6,805	7,000	6,000 to 9,000
Real estate interest 1/	10,815	10,733	9,878	9,131	8,187	7,885	7,781	7,667	7,000	6,000 to 8,000
Total interest charges	21,430	21,129	18,613	16,498	14,954	14,682	14,691	14,472	14,000	12,000 to 15,000
Repair & maintenance 1/ 2/	6,529	6,416	6,370	6,426	6,761	6,800	7,272	7,283	8,000	7,000 to 9,000
Contract & hired labor	8,938	9,427	10,008	9,484	9,975	10,441	11,110	12,543	14,000	12,000 to 16,000
Machine hire & custom work	2,213	2,566	2,354	2,089	2,105	2,350	2,674	2,634	3,000	2,000 to 4,000
Marketing, storage, & transportation	3,904	4,012	4,127	3,652	4,078	3,450	4,080	3,972	4,000	3,000 to 5,000
Misc. operating expenses 1/	10,961	10,331	10,010	9,759	11,327	11,404	12,446	12,236	11,000	10,000 to 14,000
Other operating expenses	32,545	32,751	32,868	31,420	34,246	34,445	37,582	38,669	41,000	41,000 to 46,000
Capital consumption 1/	23,758	20,847	19,299	17,788	16,740	17,075	17,553	17,545	18,000	16,000 to 20,000
Taxes 1/	4,485	4,337	4,542	4,612	4,853	4,848	5,127	5,023	6,000	5,000 to 7,000
Net rent to nonoperator landlord	5,211	8,150	7,690	6,099	7,304	7,445	7,911	8,177	8,000	7,000 to 9,000
Other overhead expenses	33,434	33,334	31,531	28,499	28,897	29,367	30,590	31,345	32,000	30,000 to 35,000
Total production expenses	139,808	141,873	132,433	125,084	128,737	133,902	140,219	144,291	146,000	146,000 to 154,000

1/ Includes operator dwellings. 2/ Beginning in 1982, miscellaneous operating expenses include other livestock purchases & dairy assessments. Totals may not add because of rounding. F = forecast.

Information contacts: Chris McGath (202) 219-0804, Robert McElroy (202) 219-0800.

Table 34.—CCC Net Outlays by Commodity &amp; Function

	Fiscal year									
	1984	1985	1986	1987	1988	1989	1990	1991	1992 E	1993 E
	\$ million									
COMMODITY/PROGRAM										
Feed grains										
Corn	-934	4,403	10,524	12,346	8,227	2,863	2,450		2,635	3,620
Grain sorghum	76	463	1,185	1,203	764	467	361	237	222	300
Barley	89	336	471	394	57	45	-93	71	185	135
Oats	5	2	26	17	-2	1	-5	12	40	28
Corn & oat products	6	7	5	7	7	8	8	9	10	4
Total feed grains	-758	5,211	12,211	13,967	9,053	3,384	2,721	2,722	3,092	4,087
Wheat	2,536	4,691	3,440	2,836	678	53	606	2,958	2,211	2,329
Rice	333	990	947	906	128	631	667	867	571	720
Upland cotton	244	1,553	2,142	1,786	666	1,461	-79	382	1,281	702
Tobacco	346	455	253	-348	-453	-367	-307	-143	-86	20
Dairy	1,502	2,085	2,337	1,166	1,295	679	505	839	330	341
Soybeans	-585	711	1,597	-476	-1,676	-86	5	40	-109	42
Peanuts	1	12	32	8	7	13	1	48	-16	-6
Sugar	10	184	214	-65	-246	-25	15	-20	-26	-27
Honey	90	81	89	73	100	42	47	19	11	6
Wool	132	109	123	152	1/ 5	93	104	172	178	185
Operating expense 3/	362	346	457	535	614	620	618	625	7	7
Interest expenditure	1,064	1,435	1,411	1,219	425	98	632	745	590	300
Export programs 4/	743	134	102	276	200	-102	-34	733	1,645	1,748
1989/89 Disaster/										
livestock assistance	0	0	0	0	0	3,919	2/ 181	121	1,029	0
Other	1,295	-314	486	371	1,665	110	609	2	1,258	1,256
Total	7,315	17,683	25,841	22,408	12,461	10,523	6,471	10,110	11,966	11,710
FUNCTION										
Price-support loans (net)	-27	6,272	13,626	12,199	4,579	-928	-399	418	641	352
Direct payments 5/										
Deficiency	612	6,302	6,166	4,833	3,971	5,798	4,178	6,224	6,100	7,446
Diversion	1,504	1,525	64	382	8	-1	0	0	0	0
Dairy termination	0	0	489	587	260	168	189	96	13	0
Other	0	0	27	60	0	42	3	21	252	93
Disaster	1	0	0	0	6	4	0	0	0	0
Total direct payments	2,117	7,827	6,746	5,862	4,245	6,011	4,370	6,341	6,365	7,539
1988/89 crop disaster	0	0	0	0	0	3,386	2/ 5	6	996	0
Emergency livestock/										
forage assistance	0	0	0	0	31	533	156	115	33	0
Purchases (net)	1,470	1,331	1,670	-479	-1,131	118	-48	646	344	468
Producer storage										
payments	268	329	485	832	658	174	185	1	26	24
Processing, storage,										
& transportation	639	657	1,013	1,659	1,113	659	317	394	205	138
Operating expense 3/	362	346	457	535	614	620	618	625	7	7
Interest expenditure	1,064	1,435	1,411	1,219	425	98	632	745	590	300
Export programs 4/	743	134	102	276	200	-102	-34	733	1,645	1,748
Other	679	-648	329	305	1,727	-46	669	86	1,114	1,134
Total	7,315	17,683	25,841	22,408	12,461	10,523	6,471	10,110	11,966	11,710

1/ Fiscal 1988 wool & mohair program outlays were \$130,635,000 but include a one-time advance appropriation of \$126,108,000, which was recorded as a wool program receipt by Treasury. 2/ Approximately \$1.5 billion in benefits to farmers under the Disaster Assistance Act of 1989 were paid in generic certificates & were not recorded directly as disaster assistance outlays. 3/ Does not include CCC Transfers to General Sales Manager. 4/ Includes Export Guarantee Program, Direct Export Credit Program, CCC Transfers to the General Sales Manager, Market Promotion Program, starting in fiscal 1991 & starting in fiscal 1992 Export Guarantee Program - Credit Reform, Export Enhancement Program, & Dairy Export Incentive Program. 5/ Includes cash payments only. Excludes payment-in-kind in fiscal 83-85 & generic certificates in fiscal 86-93. E = Estimated in the fiscal 1993 President's Budget based on November, 1991 supply & demand estimates. Minus (-) indicates a net receipt (excess of repayments or other receipts over gross outlays of funds).

Information contact: Richard Pazdalski (202) 720-5148.

## Food Expenditures

Table 35.—Food Expenditures Estimates

	Annual			1992			1992 year-to-date		
	1989 R	1990 R	1991 R	Feb	Mar P	Apr P	Feb	Mar P	Apr P
\$ billion									
Sales 1/									
Off-premise use 2/	274.0	296.4	303.3	23.9	24.9	25.1	48.7	73.6	98.6
Meals & snacks 3/	206.3	218.6	227.8	18.2	19.5	19.4	36.3	55.8	75.6
1991 \$ billion									
Sales 1/									
Off-premise use 2/	299.6	304.2	303.2	22.5	25.6	24.0	48.4	73.0	97.8
Meals & snacks 3/	223.2	235.5	227.7	18.0	19.2	19.1	35.8	55.0	74.1
Percent change from year earlier (\$ bil.)									
Sales 1/									
Off-premise use 2/	7.1	8.2	2.3	6.3	-2.7	3.6	4.5	1.9	2.3
Meals & snacks 3/	5.3	6.0	4.2	9.7	4.3	4.1	8.7	7.1	6.3
Percent change from year earlier (1991 \$ bil.)									
Sales 1/									
Off-premise use 2/	0.6	1.5	-0.3	5.6	-3.8	3.2	4.1	1.3	1.8
Meals & snacks 3/	0.7	5.4	-3.3	6.8	1.6	1.8	5.7	4.2	3.6

1/ Food only (excludes alcoholic beverages). Not seasonally adjusted. 2/ Excludes donations & home production. 3/ Excludes donations, child nutrition subsidies, & meals furnished to employees, patients, & inmates. P = preliminary. R = revised.

NOTE: This table differs from Personal Consumption Expenditures (PCE), table 2, for several reasons: (1) this series includes only food not alcoholic beverages & pet food which are included in PCE; (2) this series is not seasonally adjusted, whereas PCE is seasonally adjusted at annual rates; (3) this series reports sales only, but PCE includes food produced & consumed on farms & food furnished to employees; (4) this series includes all sales of meals & snacks. PCE includes only purchases using personal funds, excluding business travel & entertainment. For a more complete discussion of the differences, see "Developing an Integrated Information System for the Food Sector," Agr.-Econ. Rpt. No. 575, Aug 1987.

Information contact: Alden Manchester (202) 219-0880.

## Transportation

Table 36.—Rail Rates, Grain & Fruit-Vegetable Shipments

	Annual			1991				1992		
	1989	1990	1991	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Rail freight rate index 1/ (Dec. 1984=100)										
All products	106.4	107.5	109.1	109.5	109.3	109.4	109.3	109.3 P	109.3 P	109.8 P
Farm products	108.4	110.4	111.4	112.8	111.2	111.0	111.0	111.1 P	111.1 P	110.3 P
Grain	108.7	110.1	111.2	112.5	111.6	111.3	111.3	111.3 P	111.3 P	110.2 P
Food products	103.9	105.4	108.1	108.3	108.3	108.3	108.3	108.6 P	108.6 P	109.3 P
Grain shipments										
Rail carloadings (1,000 cars) 2/	28.4	27.6	28.4	28.1	30.1 P	27.3 P	28.8 P	29.0 P	30.0 P	30.0 P
Barge shipments (mil. ton) 3/	3.3	3.8	3.3	3.1	3.5	3.7	2.9	1.8	2.0	3.4
Fresh fruit & vegetable shipments 4/ 5/										
Piggy back (mil. cwt)	2.2	1.8	1.5	1.2	1.5	1.3	1.3	1.5	1.4	1.5
Rail (mil. cwt)	2.6	2.3	2.1	1.8	2.3	2.8	2.8	3.1	2.7	2.6
Truck (mil. cwt)	42.3	41.5	41.9	40.8	41.5	43.8	40.3	40.8	41.5	43.7
Cost of operating trucks hauling produce 4/										
Fleet operation (cts./mile)	123.4	130.5	126.5	128.5	123.7	124.9	124.0	122.6	122.7	122.8

1/ Department of Labor, Bureau of Labor Statistics. 2/ Weekly average; from Association of American Railroads. 3/ Shipments on Illinois & Mississippi waterways. U.S. Corps of Engineers. 4/ Agricultural Marketing Service, USDA. 5/ Preliminary data for 1991. P = preliminary.

Information contact: T.Q. Hutchinson (202) 219-0840.



## Indicators of Farm Productivity

Table 37.—Indexes of Farm Production, Input Use & Productivity <sup>1/</sup>

	1982	1983	1984	1985	1986	1987	1988	1989	1990 2/	1991 2/
	1977=100									
Farm output	116	98	112	118	111	110	102	114	119	120
All livestock products 3/	107	109	107	110	110	113	118	118	117	119
Meat animals	101	104	101	102	100	102	105	104	104	104
Dairy products	110	114	110	117	116	116	119	117	120	121
Poultry & eggs	119	120	123	128	133	144	148	153	162	168
All crops 4/	117	88	111	118	109	108	92	107	114	111
Feed grains	122	87	118	134	123	106	73	108	112	108
Hay & forage	108	100	107	106	106	102	89	101	101	103
Food grains	138	117	129	121	107	107	98	107	138	104
Sugar crops	96	93	95	87	106	111	105	105	107	112
Cotton	85	55	91	94	69	103	107	86	109	122
Tobacco	104	75	90	91	83	62	72	71	84	87
Oil crops	121	91	106	117	110	108	89	106	107	114
Cropland used for crops 6/	101	88	99	98	94	88	87	90	90	—
Crop production per acre	116	100	112	120	118	123	108	119	127	—
Farm input 5/	98	96	95	91	89	89	87	87	88	—
Farm real estate	102	101	99	97	96	95	94	93	93	—
Mechanical power & machinery	89	86	85	80	77	74	74	73	71	—
Agricultural chemicals	118	102	120	115	109	111	112	119	122	—
Feed, seed, & livestock purchases	107	103	103	102	109	116	111	113	113	—
Farm output per unit of input	119	100	118	129	124	124	116	130	135	—
Output per hour of labor										
Farm 6/	125	99	121	139	139	142	135	147	142	—
Nonfarm 7/	99	102	105	106	108	109	111	112	111	—

1/ For historical data & indexes, see Economic Indicators of the Farm Sector, Production & Efficiency Statistics, 1988, ECIFS 5-6. 2/ Preliminary indexes for 1991 based on Crop Production: 1991 Summary, released in January 1992, & unpublished data from the Agricultural Statistics Board, NASS. 3/ Gross livestock production includes minor livestock products not included in the separate groups shown. It cannot be added to gross crop production to compute farm output. 4/ Gross crop production includes some miscellaneous crops not in the separate groups shown. It cannot be added to gross livestock production to compute farm output. 5/ Includes other items not included in the separate groups shown. 6/ Economic Research Service. 7/ Bureau of Labor Statistics. — = not available.

Information contact: George Douvalis (202) 219-0432.

## Food Supply &amp; Use

Table 38.—Per Capita Consumption of Major Food Commodities <sup>1/</sup>

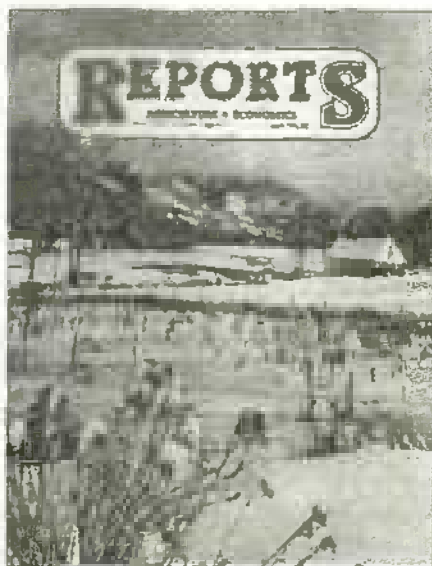
Commodity	1983	1984	1985	1986	1987	1988	1989	1990 <sup>2/</sup>
Pounds								
Red meats <sup>3/4/5/</sup>	123.9	123.7	124.9	122.2	117.4	119.5	115.9	112.4
Beef	74.1	73.8	74.8	74.4	69.5	68.6	65.4	63.9
Veal	1.4	1.5	1.5	1.8	1.3	1.1	1.0	0.9
Lamb & mutton	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.1
Pork	47.4	47.2	47.7	45.2	45.6	48.8	48.4	46.4
Poultry <sup>3/4/5/</sup>	42.4	43.6	45.2	47.1	50.8	51.8	53.8	55.6
Chicken	33.8	34.9	36.0	36.9	39.1	39.4	40.7	41.8
Turkey	8.7	8.7	9.1	10.2	11.6	12.4	13.1	13.8
Fish & shellfish <sup>4/</sup>	13.3	14.1	15.0	15.4	16.1	15.1	15.6	15.5
Eggs <sup>5/</sup>	33.0	33.0	32.4	32.2	32.2	31.2	29.9	29.6
Dairy products								
Cheese (excluding cottage) <sup>3/6/</sup>	20.6	21.5	22.5	23.1	24.1	23.7	23.8	24.7
American	11.6	11.9	12.2	12.1	12.4	11.5	11.0	11.1
Italian	5.3	5.8	6.5	7.0	7.6	8.1	8.5	9.1
Other cheese <sup>7/</sup>	3.7	3.9	3.9	4.0	4.1	4.1	4.3	4.4
Cottage cheese	4.1	4.1	4.1	4.1	3.9	3.9	3.6	3.4
Beverage milks <sup>3/</sup>	226.4	227.2	229.7	228.6	226.5	222.3	224.3	221.6
Fluid whole milk <sup>8/</sup>	130.3	126.8	123.3	116.6	111.9	105.7	97.6	90.3
Fluid lowfat milk <sup>9/</sup>	85.6	88.8	93.7	98.6	100.6	100.5	106.5	108.3
Fluid skim milk	10.6	11.6	12.6	13.5	14.0	16.1	20.2	22.9
Fluid cream products <sup>10/</sup>	5.7	6.2	6.7	7.0	7.1	7.1	7.3	7.1
Yogurt (excluding frozen)	3.3	3.7	4.1	4.4	4.4	4.7	4.3	4.1
Ice cream	18.1	18.2	18.1	18.4	18.3	17.3	16.1	15.7
Ice milk	6.9	7.0	6.9	7.2	7.4	8.0	8.4	7.7
Frozen yogurt	—	—	—	—	—	—	2.0	2.8
All dairy products, milk equivalent, milkfat basis <sup>11/</sup>	572.9	581.9	593.7	591.6	601.3	583.2	585.3	570.7
Fats & oils — Total fat content	60.0	58.8	64.3	64.3	62.9	63.0	61.1	62.7
Butter & margarine (product weight)	15.3	15.3	15.7	16.0	15.2	14.8	14.6	15.3
Shortening	18.5	21.3	22.9	22.1	21.4	21.5	21.5	22.2
Lard & edible tallow (direct use)	4.2	3.8	3.7	3.6	2.7	2.6	2.7	3.0
Salad & cooking oils	23.6	19.9	23.5	24.2	25.4	25.8	24.0	24.2
Fresh fruits <sup>12/</sup>	93.2	91.7	89.3	95.9	101.1	99.2	99.2	92.3
Canned fruit <sup>13/</sup>	12.8	12.3	12.7	12.9	13.6	13.3	13.4	13.4
Dried fruit	2.5	2.5	2.8	2.7	2.6	2.9	3.2	3.2
Frozen fruit	2.9	3.0	3.3	3.6	3.9	3.8	4.6	4.3
Frozen citrus juices <sup>14/</sup>	41.7	35.7	40.5	43.2	40.2	40.1	34.3	27.2
Vegetables <sup>12/</sup>								
Fresh	92.6	100.3	100.2	99.3	105.7	109.6	112.9	111.0
Canning	85.2	90.9	87.8	87.9	87.8	83.5	90.7	93.3
Freezing	14.6	17.5	17.1	15.8	16.8	18.3	17.8	18.1
Potatoes, all <sup>12/</sup>	118.4	121.9	122.4	125.7	125.7	122.2	126.7	127.2
Sweet potatoes <sup>12/</sup>	4.6	4.9	5.4	4.4	4.4	4.1	4.1	4.7
Peanuts (shelled)	5.9	6.0	6.3	6.4	6.4	6.9	7.0	6.0
Tree nuts (shelled)	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.5
Flour & cereal products <sup>15/</sup>	149.1	150.4	157.5	163.7	172.5	174.3	174.9	185.1
Wheat flour	117.7	119.2	124.7	125.7	129.9	130.0	129.2	137.9
Rice (milled basis)	9.9	8.5	9.0	11.6	14.0	14.3	15.2	16.2
Caloric sweeteners <sup>16/</sup>	124.3	127.0	131.3	129.6	133.7	135.1	136.4	139.1
Coffee (green bean equiv.)	10.1	10.2	10.5	10.5	10.2	9.8	10.3	10.2
Cocoa (chocolate liquor equiv.)	3.2	3.4	3.7	3.8	3.9	3.8	3.9	4.2

<sup>1/</sup> In pounds, retail weight unless otherwise stated. Consumption normally represents total supply minus exports, nonfood use, & ending stocks. Calendar-year data except fresh citrus fruits, peanuts, tree nuts, & rice, which are on crop-year basis. <sup>2/</sup> Preliminary. <sup>3/</sup> Total may not add due to rounding. <sup>4/</sup> Boneless, trimmed weight. <sup>5/</sup> Excludes shipments to the U.S. territories. <sup>6/</sup> Natural equivalent of cheese & cheese products. Total product weight is greater than natural equivalent because processed cheese & cheese food are made from natural cheese & other dairy products. Includes miscellaneous cheese not shown separately. <sup>7/</sup> Includes Swiss, Brick, Munster, cream, Neuchatel, Blue, Gorgonzola, Edam, & Gouda. <sup>8/</sup> Plain & flavored. <sup>9/</sup> Plain & flavored & buttermilk. <sup>10/</sup> Heavy cream, light cream, half & half, & sour cream & dlp. <sup>11/</sup> Includes condensed & evaporated milk & dry milk products. <sup>12/</sup> Farm weight. <sup>13/</sup> Excludes pineapple & berries. <sup>14/</sup> Single strength equivalent. <sup>15/</sup> Includes rye, corn, oat, & barley products. Excludes quantities used in alcoholic beverages, corn sweeteners, & fuel. <sup>16/</sup> Dry weight equivalent. — = Not available.

Information contact: Judy Jones Putnam (202) 219-0870.

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